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ABSTRACT

This document presents and develops existing statistical data on the education professions. Topics and problems concerning teachers that are examined in detail are: numbers of teachers; institutions in which they teach--including public schools, higher educational institutions, and vocational and technical schools; whether there are sufficient numbers to meet existing needs of pupils; personal and professional characteristics of teachers; and the ways in which persons enter teaching as a career. Statistical tables, which constitute approximately half of the document, are interspersed with text. (Author/RT)

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SELECTED STATISTICS ON EDUCATIONAL PERSONNEL

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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FOREWORD

This publication is the product of a Task Force appointed in the National Center for Educational Statistics to provide statistical support to the Bureau of Educational Personnel Development. The preparation of a statistical appendix to the first report of the Commissioner of Education on the education professions was the Task Force's major effort. The requirements of the report as a whole and this publication in particular are specified in section 503(a) of the Education Professions Development Act:

> The Commissioner shall from time to time appraise the Nation's existing and future personnel needs in the field of education, including preschool programs, elementary and secondary education, vocational and technical education, adult education, and higher education, and the adequacy of the Nation's efforts to meet these needs. In developing information relating to educational personnel needs, the Commissioner shall consult with, and make maximum utilization of statistical and other related information of, the Department of Labor, the National Science Foundation, the National Foundation on the Arts and the Humanities, State educational agencies, State employment security agencies, and other appropriate public and private agencies.

This report appeared originally as two parts, "An Explanatory Note on Educational Data" and "Appendix A: Selected Statistics on Educational Personnel" of the Office of Education publication, *The Education Professions–1968* (OE-58032). The highlights of the tables are the basis of the text which may be read without reference to the tables.

Much of what is known statistically about educational personnel nationally has been brought together in this document. The reference below each table directs the interested reader to the many data sources. Some of the data have not been published previously. In a number of instances the original data from these different sources were not immediately compatible. When possible, they have been reworked or rearranged to be comparable. In a few instances special tabulations were prepared from existing data to document specific phenomena. In all cases the data were existent (no new data collection effort was to be undertaken for this report), and the most recent available.

The Task Force was coordinated by Leslie J. Silverman who was assisted by Stafford Metz. Significant contributions were made by Jonathan Chang, Elmer Collins, Martin Frankel, Marie Fullam, Gerald Kahn, Berdj Kenadjian, Beatrice Mongello, Frances Ryan, Kenneth Tabler, and Morris Ullman.

We are grateful for the important contributions of many government agencies and non-Federal organizations. Especially important contributions were made by the National Education Association, the American Council on Education, and the Committee on Educational Data Systems of the Council of Chief State School Officers.

Dorothy M. Gilford
Assistant Commissioner for
Educational Statistics

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An Explanatory Note On Educational Data

The Education Professions Development Act embraces many of the major concerns about educational personnel which have arisen since the Second World War. Some of these are "old," and others are "new" and emerging. For the past 20 years, for example, attention has consistently focused on the supply of and demand for teachers. For the past 10 years there has been much discussion about the academic qualifications of teachers, especially in the sciences, mathematics, and foreign languages. During the 1960's, another evolving issue has been the training of teachers and staffing of schools and colleges to meet the needs of specialized groups of students—the handicapped, the poor, preprimary children, dropouts, the non-college bound, and so on.

For each of these areas statistical information is needed to describe, to highlight, to clarify, and to analyze problems and situations. Concern over the supply of teachers, a problem identified statistically in two wartime studies, gave rise in 1948 to the National Education Association's series, *Teacher Supply and Demand*. In 1964, the National Center for Educational Statistics of the U.S. Office of Education began its series of systematic projections of teacher supply and demand, published by the Office of Education with other studies annually in *Projections of Educational Statistics*. The adequacy of teachers for certain subject areas is dealt with in the National Science Foundation publication, *Secondary School Science and Mathematics Teachers* (1963).

The need for specialized staffing to teach special student groups has received statistical attention on a national scale only in the last few years. Statistical information on the need for preprimary teachers is included in a series of Office of Education publications on preprimary enrollment of children under six, begun in 1964 and issued annually thereafter. In 1966 the Office published *Equality of Educational Opportunity*, an omnibus report, part of which was devoted to describing the characteristics of teachers in schools attended by pupils of different minority groups and their relative contribution to pupil achievement.

Other statistical surveys are in process or in planning stages which, upon completion, will illuminate further the emerging areas of need. Surveys of school staffing patterns are in the development stage, involving collaboration by the Office of Education's Bureau of Educational Personnel Development, Bureau of Research, and the National Center for Educational Statistics. Also, the national evaluations of title I of the Elementary and Secondary Education Act, now in process, may yield useful insights in some of the areas as a byproduct of the primary evaluative function.

Important gaps in our statistical knowledge persist, nevertheless. Some gaps reflect lack of preparation and the inherent complexity of certain problems and the rudimentary statistical developments in these specialties. That is, there is no consensus on the definition of the problem, or the techniques of measurement are not yet developed and tested. For example: What will be the effects upon the supply of teachers of an increase in the salaries of teachers? A meaningful answer requires clarification of the questions: Should there be an across-the-board increase? Should the present differentials between States and between school districts within States be preserved? What assumptions shall we make about the income levels of the remainder of the labor force? Is there an interest in the redistribution of teachers resulting from movement from one school district to another and between States? Also to be taken into account are the differential mobility patterns for men and women, and the probable effects of State certification requirements as barriers to mobility and to entry. To measure these factors, motivation studies are needed, among other things, and these in turn require significant developments in methodology.

The problem is even more complicated because of considerations which are only partly statistical. Some of these considerations are raised in the chapters on teacher supply and demand. Alternative definitions of the term "teacher shortage" include a significant qualitative component. As Alice M. Rivlin has pointed out:

> By "teacher shortage," for example, most people do not mean that there are many unfilled positions at current salaries, but that the positions are filled with persons who are not as qualified as they should be or who are teaching a larger number of students than is pedagogically desirable. Those who predict future shortages in particular professions usually mean that if present rates of entry into the profession continue, there will not be as many doctors per thousand population or as many college professors per thousand students as they believe there should be. (*Economics of Higher Education*, Washington, D.C., U.S. Government Printing Office, 1962, pp. 376–377.)

Other gaps in our statistical knowledge stem from the degree of aggregation in which data are collected. The data used to project teacher supply and demand and to examine characteristics of elementary and secondary schooling are obtained from the States by the National Center for Educational Statistics. These data are typically reported from State records. Definitions of terms have been agreed upon and comparability of records is high. The collection of these statistics, now, is fairly routine and relatively inexpensive, and they serve adequately to meet the earlier countinuing concerns involving national, State, and local school district aggregated data.

What is desired now, however, is statistical information about units smaller than States or even school districts; data are needed on school grades and classes, teachers, and pupils. How many schools are adequately staffed? How many are inadequately staffed? What is the preparation of teachers of the handicapped? How are they utilized? What proportion of classes at a given grade level are organized on a departmental basis? How many students of a given foreign language are taught in adequately equipped audio-lingual laboratories?

One area of special importance which has been relatively neglected by educational statisticians and researchers in and out of government concerns preservice training and recruitment into the professions. It cannot be assumed that the teacher training institutions are providing the schools with sufficient numbers of persons with the required specialized skills or that these specialists are deployed where the needs are greatest. In fact, the general question of teacher supply and demand, as well as the more complex concerns of supply of teachers for special students, rest ultimately on a concern for the recruitment and training of teachers. Comprehensive and systematic national surveys on teacher training are badly needed on topics such as the achievement levels of persons entering teaching compared with those entering fields other than teaching, and the relative proportions of new teachers trained in education departments and in fields other than education, and how this relates to preparation to work in different school situations.

While all of these questions represent some of the expanding boundaries of national educational statistics, systems for regularly collecting such data on a cooperative Federal-State-local basis have not been developed. Terminology continues to vary among various reporting units. Some of the data are not recorded, and for other data, there is less than complete systematization of recordkeeping. In many States, the funding and technical staff resources are not available for developing such basic data banks. Hence, important gaps exist.

The technical, statistical, and educational manpower expertise is available nationally to design a development program to make important strides toward filling the gaps. With the special knowledge of local situations available in State education agencies, reasonably steady progress toward a regular and systematic analysis of educational manpower would be feasible through a Federal-State statistical system in this field.

New concerns create new needs for statistical information, and this report enumerates a number of them. In addition, in doing so it is hoped the report may contribute to new development of more useful educational statistics.

Selected Statistics on Educational Personnel

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Introduction

This statistical appendix presents and develops existing statistical data on the education professions. Topics and problems concerning teachers that are examined in detail are: numbers of teachers, institutions in which they teach, whether there are sufficient numbers to meet existing needs of pupils, personal and professional characteristics of teachers, and how persons "flow" into teaching as a career. Throughout the appendix, highlights of the findings are presented and, when clearly indicated, interpretations have been made and implications drawn. For a detailed picture of the statistical character of the teaching profession, however, it is necessary to examine the individual tables themselves.

The point of departure for a statistical approach is the placement of teachers in the labor force as a whole. Data on this subject are presented in table 1. In the decade 1958–1967 there has been an increase of nearly one million teachers. Rates of increase were greatest for teachers in colleges and universities, next highest for secondary school teachers, and smallest for elementary school teachers. All of the teaching groups (other than elementary teachers) had rates of increase greater than for other professional and technical personnel and far greater than for nonprofessional and nontechnical workers. By the end of the decade teachers represented 3.5 percent of the employed civilian labor force and over one-fourth of all professional and technical workers.

Elementary and Secondary Education

The growth of public elementary and secondary education over the last 100 years is detailed in table 2. This summary outlines the relative expansion in the school age population, in enrollment, and in numbers of instructional staff.

TABLE 1.—*Numbers of teachers compared with other professional and technical workers, nonprofessional workers, and total civilian employment: United States, 1958, 1961, 1964, and 1967*

Occupation	1958	1961	1964	1967	Percent change 1958–61	1961–64	1964–67	1958–67
Total civilian employment	63,036,000	65,746,000	69,305,000	74,372,000	4.3	5.0	7.3	18.0
Professional and technical	6,961,000	7,705,000	8,550,000	9,879,000	10.7	11.0	15.5	41.9
Teachers at all levels	1,786,164	2,018,187	2,303,849	2,634,302	13.0	14.1	14.3	47.5
Elementary school teachers	931,000	1,015,000	1,096,000	1,193,600	9.0	8.0	8.9	28.1
Secondary school teachers	544,000	653,000	786,000	902,000	20.0	20.4	14.8	65.8
2-year institution teaching faculty	30,440	35,728	45,040	54,854	17.4	26.1	21.8	80.2
4-year institution teaching faculty	280,724	314,459	376,809	484,448	12.0	19.8	28.6	72.6
Professional and technical personnel other than teachers	5,174,836	5,687,813	6,246,151	7,244,698	9.9	9.8	16.0	40.0
Occupations other than professional and technical	56,075,000	58,040,000	60,756,000	64,493,000	3.5	4.8	6.2	15.0

Note: Data for teachers are not strictly comparable to data for other workers, since they are based on academic rather than calendar years.

Source: U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, *Projections of Educational Statistics, 1977–78*, and *1968 Manpower Report of the President*, Government Printing Office, Washington, D.C.

Table 2.—*Historical summary of public elementary and secondary school statistics, for the United States: 1869–70 to fall 1967*

[In thousands]

	1869–70	1899–1900	1929–30	1949–50	1959–60 [1]	1965–66 [1]	Fall 1967 [1]
POPULATION AND PUPILS							
Total population [2] [3]	39,818	75,995	121,770	148,665	179,323	193,795	197,863
Population aged 5–17 years, inclusive [3]	12,055	21,573	31,417	30,168	43,881	49,995	51,583
Percent of total population aged 5–17	30.3	28.4	25.8	20.3	24.5	25.8	26.1
Total enrollment in elementary and secondary day schools	6,872	15,503	25,678	25,111	36,087	42,173	43,887
Preprimary and grades 1–8	6,792	14,984	21,279	19,387	27,602	30,563	31,640
Grades 9–12 and postsecondary	[4] 80	[4] 519	4,399	5,725	8,485	11,658	12,247
Percent of population 5–17 years enrolled	57.0	71.9	81.7	83.2	82.2	85.7	85.1
High school graduates	NA	[4]62	[4]592	1,063	1,627	2,327	NA
INSTRUCTIONAL STAFF							
Total instructional staff	NA	NA	880	962	1,464	1,885	[5]2,097
Supervisors	NA	NA	7	9	14	22	[5]22
Principals	NA	NA	31	39	64	77	[5]90
Teachers, librarians, and other nonsupervisory instructional staff [6]	201	423	843	914	1,387	1,786	[5]1,985
Men	78	127	140	195	[7] 568	[7] 568	NA
Women	123	296	703	719	[7] 985	[7] 1,218	NA
Percent men of total	38.7	29.9	16.6	21.3	[7] 29.0	[7] 31.8	NA

---

[1] Beginning 1959–60, includes Alaska and Hawaii.

[2] Data as of July 1 of each year.

[3] Excludes Armed Forces overseas.

[4] From reports of public high schools.

[5] Based on sample of local public school systems, 1967–68.

[6] Before 1919–20, data are for number of different persons employed rather than number of positions.

[7] Distribution estimated by Office of Education.

Source: U.S. Department of Health, Education, and Welfare, *Statistics of State School Systems, 1965–66, Fall 1967 Statistics of Public Schools*, and U.S. Bureau of Census, *Population Estimates, Series P–25, No. 385.*

Table 3.—*Board members and professional staff of State boards of education, professional staff of State departments of education, and board members and staff of local basic administrative units (school districts), United States: 1963–64 and 1965–66*

	1963–64	1965–66	Percent change
State boards of education:			
Board members [1]	492	500	1.6
Professional staff	202	209	3.5
State departments of education:			
Chief State school officers and administrative staff	664	825	24.2
Professional staff on statewide basis	3,267	5,221	59.8
Regional and district supervisory staff	1,217	1,583	30.1
Local basic administrative units (school districts):			
Number of districts	31,703	26,983	—14.9
Total board members and staff	2,563,729	2,706,232	5.6
Board of education members	146,709	126,226	—14.0
Superintendents	13,392	13,703	2.3
Assistants to superintendents	6,175	8,751	41.7
Instructional staff	1,716,577	1,884,509	9.8
Noninstructional staff	680,876	673,043	—1.2

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[1] Includes ex-officio members and members of State boards of vocational education.

Source: U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, *Statistics of State School Systems, 1963–64*, and *1965–66.*

Tables 3 through 5 provide details on the composition of the staffs in the public school systems in recent years. The percent increase has been greatest for administrative and supervisory staffs in State departments of education and local school districts in the period 1963–64 through 1965–66 (table 3). The increase in these staff positions within school districts should be weighed against the 15 percent decrease in the number of school districts.

Information on instructional and noninstructional staffs is provided in tables 4 and 5. Calculation from the information in table 4 of the proportion of instructional staff accounted for by classroom teachers will show a slight decrease over the three time periods. This coincides with the rise of Federal support programs for specialized staff including guidance counselors, librarians, etc. Although the number of classroom teachers in 1967 still represented 90 percent of the total instuctional staff, it now becomes plausible to visualize a time when the proportion may become much smaller.

TABLE 4.—*Instructional staff in public elementary and secondary day schools, by type of position: 50 States and the District of Columbia, 1963–64, 1965–66, and fall 1967*

	1963–64 [1]	1965–66 [1]	Fall 1967 [2]
Total instructional staff except aides	1,716,577	1,884,509	2,097,011
Principals and assistant principals	72,634	77,341	89,957
Consultants and supervisors of instruction	18,718	21,594	22,009
Classroom teachers	1,567,974	1,710,888	1,848,842
Nursery and kindergarten	(18,091)	(21,582)	(43,432)
Other elementary	(888,515)	(952,516)	(986,459)
Secondary	(661,368)	(736,790)	(818,951)
Librarians	23,769	28,965	35,856
Guidance staff [3]	25,991	38,646	43,721
Psychological staff [3]	3,631	3,890	6,049
Audiovisual staff	NA	NA	2,446
Other professional staff serving instruction [3]	3,860	3,185	[4] 48,131
Teacher aides	NA	NA	57,684

[1] The data reported in these columns are not strictly comparable with the data for fall 1967. These data are derived from a census of State records. Because of nonreporting for some items by some States and somewhat less than nationally uniform reporting, some "reporting error" is contained in these columns.

[2] These data are derived from a stratified probability sample (1,200) of all school districts in the Nation. The "sampling error" may be measured for each datum and is relatively small for national estimates.

[3] For some States, personnel in these categories are included under "classroom teachers."

[4] Includes staff of the superintendent's office which are usually not considered instructional staff.

Source: U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics: (1) *Statistics of State School Systems, 1963–64* and *1965–66*. (2) *Statistics of Local Public School Systems, 1967*.

TABLE 5.—*Personnel engaged in health services, food services, recreational, and other activities in local basic administrative units (school districts), for States reporting: 1963–64 and 1965–66* [1]

	1963–64	1965–66
Physicians (including psychiatrists):		
Full-time	456	522
Part-time	5,140	3,263
Dentists:		
Full-time	137	134
Part-time	2,294	1,715
Nurses:		
Full-time	13,117	14,235
Part-time	1,189	1,215
Dental hygienists:		
Full-time	881	794
Part-time	97	141
Other professional and technical health personnel:		
Full-time	506	1,408
Part-time	190	358
Food services personnel:		
Full-time	172,885	202,425
Part-time	23,292	28,778
Recreational personnel:		
Full-time	5,964	796
Part-time	6,625	9,398
Attendance personnel:		
Attendance officers:		
Full-time	3,325	2,907
Part-time	2,985	2,039
Full-time visiting teachers	2,345	2,730
Full-time plant operation and maintenance personnel	193,565	170,665
Full-time transportation personnel	92,803	91,242

[1] The data reported in these columns are not strictly comparable. These data are derived from a census of State records. Because of nonreporting for some items by some States and somewhat less than nationally uniform reporting, some "reporting error" is contained in these columns.

Source: U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics: *Statistics of State School Systems, 1963–64* and *1965–66*.

The Need for Educational Professionals

Tables 7 through 18 provide basic statistics on the number of teachers and specialists in elementary and secondary schools and estimates of the degree to which the present staff meet instructional needs. The concept of need should be distinguished from the more commonly employed concept of demand which is used in the chapter of this Report on Supply and Demand for Elementary and Secondary Educational Personnel. "Need" reflects social and educational values and goals, e.g., every child should have the opportunity to develop his potential and schools should contribute to this process by providing quality education for the child. The specification of need is based on current professional consensus, e.g., the American Library Association recommends a minimum of one librarian for each 300 pupils.

The concept of "demand," on the other hand, refers to the actual number of unfilled positions to be filled at any given time. It reflects limitations of space, facilities, and financial resources. Demand is calculated on the basis of past trends in hiring, adjusted to take into account changes in enrollment and staff turnover resulting from retirement, death, resignation, etc.

Because of constraining factors, which often include disagreement regarding the content or importance of educational goals, the "demand" for staff at any given time generally falls short of meeting the "need" for staff.

TABLE 6.—*Current need for additional staff in elementary and secondary schools*

Instructional level or type of student for which additional teachers are needed		Minimum number of additional teachers needed
Preprimary:		
Additional teachers needed to reduce pupil-teacher ratios	17,000	
Additional teachers needed to meet increased enrollment	11,000	
Total		28,000
Elementary:		
Additional teachers needed to reduce pupil-teacher ratios	123,500	
Teachers needed to replace currently uncertified teachers	56,500	
Total		180,000
Secondary:		
Additional teachers needed to reduce pupil-teacher ratios	48,500	
Teachers needed to replace currently uncertified teachers	34,000	
Total		82,500
Specialized personnel:		
Elementary	22,500	
Secondary	6,000	
Total		28,500
Teachers for the handicapped		232,000
Total Educational Professionals needed		551,000

The current need for additional staff is summarized in table 6 using data from table 7 through 12, 15, and 18. These estimates are minimums.

The total number of educational professionals needed, 551,000, can be put into perspective by relating it to the total number of degrees granted in education and related fields in any given year (table 19). For example, the number of elementary school teachers needed, 180,000, is approximately two and one-half times as large as the 74,000 degrees granted in elementary education in the United States in 1967–68.

Elementary and Secondary Teachers—Table 7 gives detailed data on the need for public elementary and secondary classroom teachers. In fall 1967, 29 States had elementary school pupil-teacher ratios higher than the preferred 25:1 ratio; 30 States had secondary school ratios above the 20:1 standard, and 20 States were above the desired ratios for both elementary and secondary

TABLE 7.—*Enrollment, number of teachers, pupil-teacher ratios in public elementary and secondary schools, United States, fall 1956–66, and additional teachers needed to achieve selected ratios, by State and level: United States, fall 1967*

	Elementary				Secondary			
	Enrollment	Number of teachers [1]	Pupil-teacher ratio	Additional [1] teachers needed at 25 to 1 ratio [2]	Enrollment	Number of teachers [1]	Pupil-teacher ratio	Additional teachers needed at 20 to 1 ratio [2]
Fall								
1956	22,217,000	751,000	29.6	NA	9,502,000	447,000	21.2	NA
1957	22,860,000	786,000	29.1	NA	10,091,000	473,000	21.3	NA
1958	23,415,000	815,000	28.7	NA	10,666,000	491,000	21.7	NA
1959	23,906,000	832,000	28.7	NA	11,276,000	524,000	21.5	NA
1960	24,350,000	858,000	28.4	NA	11,931,000	550,000	21.7	NA
1961	24,603,000	869,000	28.3	NA	12,861,000	592,000	21.7	NA
1962	25,264,000	886,000	28.5	NA	13,485,000	621,000	21.7	NA
1963	25,775,000	908,000	28.4	NA	14,412,000	669,000	21.5	NA
1964	26,221,000	940,000	27.9	NA	15,195,000	708,000	21.4	NA
1965	26,670,000	965,000	27.6	NA	15,504,000	746,000	20.8	NA
1966	27,127,000	1,005,000	27.0	NA	15,928,000	783,000	20.3	NA
1967	27,381,259	1,032,862	26.5	80,667	16,505,546	809,410	20.4	47,782
NORTH ATLANTIC								
New England	1,430,102	58,490	24.3	333	889,194	45,526	19.5	1,723
Connecticut	400,228	16,687	24.0	-----	214,280	12,019	17.8	-----
Maine	168,876	6,997	24.1	-----	59,950	3,623	16.5	-----
Massachusetts	614,660	25,193	24.4	-----	465,137	21,548	21.6	1,709
New Hampshire	84,483	3,470	24.3	-----	54,064	2,689	20.1	14
Rhode Island	95,424	3,643	26.2	174	71,751	3,642	19.7	-----
Vermont	66,481	2,500	26.6	159	24,012	2,000	12.0	-----
Mideast	4,692,595	192,879	24.3	1,777	3,354,669	174,740	19.2	2,570
Delaware	66,354	2,553	26.0	101	51,124	2,523	20.3	33
District of Columbia	95,727	3,750	25.5	79	53,423	2,665	20.0	-----

TABLE 7 (Continued)

	Elementary				Secondary			
	Enrollment	Number of teachers[1]	Pupil-teacher ratio	Additional[1] teachers needed at 25 to 1 ratio[2]	Enrollment	Number of teachers[1]	Pupil-teacher ratio	Additional teachers needed at 20 to 1 ratio[2]
Maryland	479,780	19.388	24.7	-----	346,162	16,701	20.7	607
New Jersey	905.084	36,313	24.9	-----	472,560	25,771	18.3	-----
New York	1.903,900	82,800	23.0	-----	1,417,200	78,300	18.1	-----
Pennsylvania	1,241,800	48,075	25.8	1,597	1,014,200	48,780	20.8	1,930
GREAT LAKES AND PLAINS								
Great Lakes	5.606,480	201,472	27.8	23,497	3,112,220	159,019	19.6	4,204
Illinois	1,442.494	57,493	25.1	207	772,334	38,848	19.9	-----
Indiana	720,778	26,296	27.4	2,535	460,662	21,529	21.4	1,504
Michigan	11,880,000	42,200	28.2	5,320	854,000	40,000	21.4	2,700
Ohio	1,706,540	52,827	32.3	15,435	652,360	38,167	17.1	-----
Wisconsin	548,668	22,656	24.2	----	372,364	20,475	18.2	-----
Plains	2.855,111	95,132	24.8	4,688	1,317,246	70,799	18.6	495
Iowa	359,479	17,211	20.9	-----	284,479	13,800	20.6	424
Kansas	371,130	14,046	26.4	799	149,626	10,671	14.0	-----
Minnesota	476,267	18,378	25.9	673	387,168	19,287	20.1	71
Missouri	741,662	26,450	28.0	3,216	260,877	13,774	18.9	-----
Nebraska	194,542	8,693	22.4	-----	131,827	7,024	18.8	-----
North Dakota	94,181	4,211	22.4	-----	53,663	3,029	17.7	-----
South Dakota	117,850	6,143	19.2	-----	49,606	3,214	15.4	-----
SOUTHEAST								
Southeast	6,105,962	226,147	27.0	18,092	3,826,222	165,737	23.1	25,574
Alabama	456,469	16,300	28.0	1,959	374,416	15,700	23.8	3,021
Arkansas	249,760	9,826	25.4	164	201.722	9,091	22.2	995
Florida	721,039	27,988	25.8	854	578,915	24,850	23.3	4,096
Georgia	709,079	25,587	27.7	2,776	377,802	16,062	23.5	2,828
Kentucky	447,544	17,118	26.1	784	239,807	10,824	22.2	1,166
Louisiana	511,250	19,796	25.8	654	329,064	14,642	22.5	1,811
Mississippi	346,447	11,660	29.7	2,198	236,141	9,370	25.2	2,437
North Carolina	852,841	32,472	26.3	1,642	340,426	15,413	22.1	1,608
South Carolina	386,110	13,712	28.2	1,782	260,797	11,419	22.8	1,621
Tennessee	563,816	19,620	28.7	2,983	310,517	12,630	24.6	2,896
Virginia	628,674	23,509	26.7	1,638	393,620	18,769	21.0	912
West Virginia	232,933	8,559	27.2	758	182,995	6,967	26.3	2,188
WEST AND SOUTHWEST								
Southwest	2,697,814	91,081	29.6	17,290	1,199,683	69,128	17.4	2,556
Arizona	289,500	12,016	24.1	-----	109,950	4,111	26.7	1,387
New Mexico	151,875	6,098	24.9	-----	119,470	5,198	23.0	776
Oklahoma	333,884	13,467	25.2	88	254,233	12,319	20.6	393
Texas	1,917,555	59,500	32.2	17,202	716,030	47,500	15.1	-----
Rocky Mountains	716,160	29,053	24.7	1,121	525,354	24,790	21.2	686
Colorado	295,523	12,161	24.3	-----	214,801	10,914	19.7	-----
Idaho	91,709	3,619	25.3	49	84,395	3,877	21.8	343
Montana	110,005	5,287	20.8	-----	61,801	2,747	22.5	348
Utah	170,434	5,745	29.7	1,072	127,280	5,141	24.8	-----
Wyoming	48,489	2,241	21.6	-----	37,077	2,111	17.6	-----
Far West	3,777,035	138,608	27.2	13,869	2,280,958	99,671	22.9	11,853
Alaska	47,050	1,886	24.9	-----	18,701	1,184	15.8	-----
California	2,849,275	100,780	28.3	13,191	1,616,991	70,053	23.1	10,797
Hawaii	97,696	3,980	24.5	-----	71,734	2,690	26.7	897
Nevada	69,279	2,800	24.7	-----	42,474	1,965	21.6	159
Oregon	276,777	12,362	22.4	-----	186,151	9,529	19.5	-----
Washington	426,958	16,800	26.0	678	344,907	14,250	24.2	-----

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[1] For fall 1956–66 the number of teachers reported included both full-time and part-time teachers. For fall 1967 the number of part-time teachers was reduced to their full-time equivalent.

[2] In estimating the additional teachers needed, only those States were taken into account which had pupil-teacher ratios larger than the criteria selected.

NA = Not applicable.

Source: U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, (1) *Fall 1967 Statistics of Public Schools.* (2) *Projections of Educational Statistics to 1976–77.*

school levels. At the elementary school level, over 80,000 additional teachers are needed in the 29 States that have unfavorable ratios to bring them to the 25:1 criterion ratio. Nearly 48,000 additional secondary teachers are needed for the 30 States with unfavorable ratios to bring them to the preferred ratio of 20:1. Had it been possible to calculate the additional teachers needed for school districts rather than for States, the resulting estimates would have been larger, perhaps by as much as one-half.

Table 8 shows the number of full-time teachers with less than standard certification at both the public elementary and secondary school levels. At the elementary level 56,500 teachers are not certified, and at the secondary level 34,000 are not certified. The need for additional public school classroom teachers is 220,000; approximately 130,000

TABLE 8.—*Number of classroom teachers in public elementary and secondary schools and uncertified teachers, fall 1967, and average teacher salaries 1966–67, by State and region*

State	Elementary			Secondary		
	Number of full-time teachers fall 1967	Number of full-time teachers with less than standard certificates fall 1967	Average salary 1966–67 [1]	Number of full-time teachers fall 1967	Number of full-time teachers with less than standard certificates fall 1967	Average salary 1966–67 [1]
Total United States	1,029,211	56,500	$6,622	806,847	34,000	$7,109
NORTH ATLANTIC						
New England:						
Connecticut	16,570	750	$7,414	12,019	850	$7,773
Maine	6,902	406	5,633	3,598	310	6,106
Massachusetts	25,014	241	7,048	21,865	622	7,452
New Hampshire	3,388	254	5,938	2,654	159	6,290
Rhode Island	3,643	421	6,900	3,642	324	7,000
Vermont	2,500	-----	5,511	2,000	-----	6,022
Mideast:						
Delaware	2,526	232	7,878	2,502	198	7,698
District of Columbia	3,750	1,300	([2])	2,665	1,100	([2])
Maryland	19,388	-----	6,876	16,701	-----	7,506
New Jersey	36,162	5,314	7,175	25,717	2,075	7,625
New York	82,600	4,000	7,600	78,100	6,500	8,200
Pennsylvania	47,894	588	6,829	48,642	902	6,962
GREAT LAKES AND PLAINS						
Great Lakes:						
Illinois	56,688	2,703	7,285	38,352	684	7,878
Indiana	26,122	701	7,173	21,482	194	7,557
Michigan	42,200	-----	7,850	40,000	-----	7,550
Ohio	52,460	5,500	6,300	37,950	3,200	6,900
Wisconsin	22,656	364	6,481	20,475	51	7,049
Plains:						
Iowa	17,165	763	6,115	13,800	367	6,778
Kansas	14,046	([2])	5,925	10,671	([2])	6,275
Minnesota	18,227	468	6,675	19,152	225	7,175
Missouri	26,450	1,149	6,045	18,774	25	6,615
Nebraska	8,598	245	5,233	6,949	122	6,098
North Dakota	4,150	-----	4,966	2,967	-----	6,085
South Dakota	6,143	197	4,450	3,214	103	5,575
SOUTHEAST						
Southeast:						
Alabama	16,300	1,400	5,451	15,700	600	5,747
Arkansas	9,804	220	4,883	9,044	150	5,120
Florida	27,970	223	([2])	24,832	70	([2])
Georgia	25,587	260	5,845	16,062	114	5,970
Kentucky	17,036	729	5,350	10,790	486	5,775
Louisiana	19,780	1,599	6,230	14,631	905	6,596
Mississippi	11,660	-----	4,489	9,370	-----	4,727
North Carolina	32,450	1,777	5,561	15,400	664	5,859
South Carolina	13,676	46	5,099	11,358	40	5,465
Tennessee	19,620	885	5,460	12,680	165	5,950
Virginia	23,489	1,167	5,895	18,709	297	6,495
West Virginia	8,550	889	5,358	6,950	286	5,568

TABLE 8 (Continued)

State	Elementary: Number of full-time teachers fall 1967	Elementary: Number of full-time teachers with less than standard certificates fall 1967	Elementary: Average salary 1966–67 [1]	Secondary: Number of full-time teachers fall 1967	Secondary: Number of full-time teachers with less than standard certificates fall 1967	Secondary: Average salary 1966–67 [1]
WEST AND SOUTHWEST						
Arizona	12,000	51	7,065	4,100	8	7,645
New Mexico	6,087	2	6,690	5,188	2	6,671
Oklahoma	13,467	-----	5,817	12,319	-----	5,995
Texas	59,500	(2)	5,795	47,500	(2)	6,015
Rocky Mountains:						
Colorado	12,100	148	6,487	10,860	112	6,755
Idaho	3,601	848	5,581	3,822	821	6,048
Montana	5,253	350	5,725	2,726	16	6,550
Utah	5,698	99	6,445	5,126	82	6,525
Wyoming	2,230	-----	6,394	2,109	-----	6,549
Far West:						
Alaska	1,886	-----	8,988	1,184	-----	9,822
California	100,400	4,500	8,117	69,800	2,000	9,024
Hawaii	3,980	-----	7,649	2,690	-----	7,734
Nevada	2,800	-----	7,270	1,965	-----	7,620
Oregon	12,245	612	6,845	9,391	359	7,239
Washington	16,800	450	6,985	14,250	50	7,562

[1] National Education Association, Research Division, *Estimates of School Statistics, 1967–68*, 1968, (p. 30). (Copyright 1967 by the National Education Association. All rights reserved.)

[2] Not available.

Source: Department of Health, Education, and Welfare, Office of Education, *Fall 1967 Statistics of Public Schools*, Washington, D.C., 1968 (pp. 8–9).

are needed to meet the preferred pupil-teacher ratios indicated above, and an additional 90,000 are needed either for replacement or to meet acceptable certification requirements.

Data on enrollment and classroom teachers for nonpublic elementary and secondary schools are given in tables 9 and 10. Most of the nonpublic enrollment at both the elementary and secondary levels is in Roman Catholic schools. Pupil-teacher ratios were lower in 1966–67 than in the preceding year. The ratios are highest for Roman Catholic schools, next highest for other church-re-

TABLE 9.—*Enrollment, teachers, and pupil-teacher ratios in nonpublic schools by affiliation, and level: United States, 1965–66 and 1966–67*

	Total		Church-related: Roman Catholic		Church-related: Other church-related		Not church-related	
	1965–66	1966–67	1965–66	1966–67	1965–66	1966–67 [1]	1965–66	1966–67 [1]
Enrollment:								
Total	6,304,772	6,274,880	5,481,825	5,458,048	482,177	474,942	341,270	341,890
Elementary	4,928,682	4,910,358	4,370,277	4,354,973	376,783	371,271	181,622	184,114
Secondary	1,376,090	1,364,522	1,111,048	1,103,075	105,394	103,671	159,648	157,776
Teachers: [2]								
Total	222,983	236,413	168,569	177,080	25,064	28,005	29,350	31,328
Elementary	147,106	153,604	117,166	120,773	16,585	18,875	13,355	13,956
Secondary	75,877	82,809	51,403	56,307	8,479	9,130	15,995	17,372
Pupil-teacher ratios:								
Elementary	33.5	32.0	37.3	36.1	22.7	19.7	13.6	13.2
Secondary	18.1	16.5	21.6	19.6	12.4	11.4	10.0	9.1

[1] Estimated by National Center for Educational Statistics, U.S. Office of Education.

[2] Full-time equivalent of full-time and part-time teachers.

Source: U.S. Office of Education, National Center for Educational Statistics, *Statistics of Nonpublic Elementary and Secondary Schools, 1965–66*, and unpublished data from the U.S. Catholic Conference, Washington, D.C.

TABLE 10.—*Estimated enrollment, number of teachers, pupil-teacher ratios of nonpublic schools, and additional teachers needed at selected ratios, by level, State, and region: United States 1965–66 and 1966–67* [1]

	Elementary							Secondary						
	Enrollment		Teachers		Pupil-teacher ratio		Additional teachers needed at 25 to 1 ratio [2]	Enrollment		Teachers		Pupil-teacher ratio		Additional teachers needed at 20 to 1 ratio [2]
	1965–66	1966–67	1965–66	1966–67	1965–66	1966–67		1965–66	1966–67	1965–66	1966–67	1965–66	1966–67	
United States	4,928,682	4,910,358	147,106	153,604	33.5	32.0	48,322	1,376,090	1,364,522	75,877	82,809	18.1	16.5	373
North Atlantic:														
Connecticut	86,983	87,890	2,880	2,968	30.2	29.6	547	37,266	37,170	2,645	2,752	14.1	13.5	----------
Delaware	15,218	17,300	480	596	31.7	29.0	96	5,316	4,870	316	350	16.8	13.9	----------
Maine	19,471	19,270	583	644	33.4	29.9	127	11,728	9,790	821	821	14.3	11.9	----------
Maryland	108,046	107,407	3,137	3,289	34.4	32.6	1,007	30,499	28,669	1,877	2,091	16.2	13.7	----------
Massachusetts	184,632	189,090	5,643	6,058	32.7	31.2	1,506	71,912	64,690	4,254	4,206	16.9	15.4	----------
New Hampshire	24,980	24,680	816	835	30.6	29.6	152	10,663	10,230	753	725	14.2	14.1	----------
New Jersey	265,808	278,550	7,169	7,010	37.1	39.3	4,410	62,417	64,660	3,518	4,185	17.7	15.5	----------
New York	714,508	686,048	21,634	21,240	33.0	32.3	6,202	189,922	183,747	9,605	11,772	19.8	15.6	----------
Pennsylvania	465,964	472,340	12,161	12,887	38.3	36.6	6,007	135,377	139,020	6,572	7,030	20.6	19.8	----------
Rhode Island	40,167	40,560	1,242	1,345	32.3	30.2	277	10,724	9,500	645	639	16.6	14.9	----------
Vermont	9,758	8,772	317	323	30.8	27.2	28	7,047	5,339	510	465	13.8	11.5	----------
District of Columbia	15,354	14,915	578	685	26.6	21.8	----------	7,728	7,986	532	592	14.5	13.5	----------
Great Lakes and Plains:														
Illinois	443,817	441,240	12,182	12,311	36.4	35.8	5,339	109,377	118,590	5,177	6,328	21.1	18.7	----------
Indiana	115,515	112,390	3,330	3,402	34.7	33.0	1,094	26,222	26,730	1,318	1,558	19.9	17.2	----------
Iowa	74,994	74,460	2,381	2,761	31.5	26.9	217	24,960	24,260	1,314	1,377	19.0	17.6	----------
Kansas	39,767	39,740	1,243	1,349	32.0	29.5	241	11,482	10,850	641	662	17.9	16.4	----------
Michigan	276,448	274,530	7,328	7,759	37.7	35.8	3,222	77,282	80,080	3,585	3,912	21.6	20.5	92
Minnesota	133,948	126,770	4,145	4,208	32.3	30.1	863	29,351	29,030	1,690	1,634	17.4	17.8	----------
Missouri	139,190	135,000	4,180	4,413	33.3	30.6	987	37,073	38,260	2,208	2,309	16.8	16.6	----------
Nebraska	45,255	46,050	1,471	1,608	30.8	28.7	239	13,957	14,380	801	877	17.4	16.4	----------
North Dakota	14,452	13,580	519	502	27.8	27.1	41	4,882	4,370	300	238	16.3	18.4	----------
Ohio	298,044	325,870	8,137	8,373	36.6	38.9	4,662	83,527	85,090	3,983	3,974	21.0	21.4	281
South Dakota	14,012	14,250	500	543	28.0	26.2	27	4,533	3,660	328	244	13.8	15.0	----------
Wisconsin	230,124	208,030	6,612	6,720	34.8	31.0	1,601	42,872	35,850	2,097	2,046	20.2	17.5	--------
Southeast:														
Alabama	22,855	27,980	835	1,068	27.4	26.2	51	7,495	8,000	501	587	15.0	16.6	----------
Arkansas	10,039	9,710	352	346	28.5	28.0	40	3,213	2,850	184	142	17.5	20.0	----------
Florida	77,472	74,720	2,682	2,907	28.9	25.7	82	16,909	20,010	1,154	1,517	14.7	13.2	----------
Georgia	19,923	18,860	758	778	26.3	24.2	----------	9,224	9,040	691	730	13.3	12.4	----------
Kentucky	71,366	70,300	2,085	2,247	34.2	31.3	565	22,062	22,300	1,218	1,371	18.1	16.3	----------
Louisiana	112,748	115,690	3,618	4,183	31.2	27.6	445	30,074	30,350	1,592	1,908	18.9	15.9	----------
Mississippi	16,056	17,180	631	632	25.4	27.2	55	5,465	4,110	338	288	16.2	14.3	----------
North Carolina	17,770	18,070	729	835	24.4	21.6	----------	4,833	4,240	423	353	11.4	12.0	----------
South Carolina	12,433	12,752	525	656	23.7	19.4	----------	3,991	3,989	288	311	13.9	12.8	----------
Tennessee	22,656	23,590	932	1,040	24.3	22.7	----------	12,511	13,570	848	1,005	14.8	13.5	----------
Virginia	44,384	44,494	1,653	1,879	26.9	23.7	----------	18,500	16,520	1,393	1,572	13.3	10.5	----------
West Virginia	11,185	11,290	346	353	32.3	32.0	99	3,516	4,680	240	257	14.7	18.2	----------

West and Southwest:														
Alaska	1,535	1,490	67	68	22.9	21.9	----------	924	1,000	79	83	11.7	12.0	----------
Arizona	27,520	23,966	862	844	31.9	28.4	115	7,058	6,855	460	501	15.3	13.7	----------
California	354,207	352,040	10,934	11,934	32.4	29.5	2,147	97,121	96,070	5,436	6,045	17.9	15.9	----------
Colorado	35,058	34,180	1,212	1,197	28.9	28.6	170	10,260	9,770	674	665	15.2	14.7	----------
Hawaii	19,916	21,690	707	585	28.2	37.1	283	10,054	10,310	595	656	16.9	15.7	----------
Idaho	7,930	6,960	229	217	34.6	32.0	61	1,377	1,480	88	96	15.6	15.4	----------
Montana	14,850	14,930	469	398	31.7	37.5	199	4,243	4,240	240	268	17.7	15.8	----------
Nevada	3,785	4,090	130	103	29.1	39.7	61	1,028	980	54	54	19.0	18.1	--------
New Mexico	19,458	16,740	646	613	30.1	27.3	57	5,129	3,910	359	222	14.3	17.6	----------
Oklahoma	14,909	13,050	554	556	26.9	23.5	----------	3,643	3,540	249	297	14.6	11.9	----------
Oregon	27,786	24,124	898	936	30.9	25.8	29	7,611	7,207	465	503	16.4	14.3	----------
Texas	132,920	141,150	4,851	5,496	27.4	25.7	150	28,105	28,340	1,778	1,594	15.8	17.6	----------
Utah	4,296	4,670	137	163	31.4	28.6	24	1,943	1,930	144	140	13.5	13.8	----------
Washington	45,918	44,660	1,483	1,615	31.0	27.6	181	13,373	12,470	840	835	15.9	14.9	----------
Wyoming	3,248	3,250	113	131	28.7	24.8	----------	811	290	56	22	14.5	13.2	----------

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[1] Estimated by Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics.

[2] For calculation procedure, see table 5, footnote 1.

Source: Unpublished 1966–67 Roman Catholic elementary and secondary school enrollment and teachers data from the U.S. Catholic Conference, Washington, D.C., Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, *Statistics of Nonpublic Elementary and Secondary Schools, 1965–66.*

lated schools, and lowest for schools that are not church-related. Of the nonpublic school groups in table 9 only Catholic elementary schools exhibit a pupil-teacher ratio above the standards used here.

Pupil-teacher ratios in nonpublic schools in 1966–67 on a State-by-State basis are estimated in table 10. In all but two States the ratio at the secondary school level is favorable (20:1 or below) which indicates little need for additional teachers in nonpublic secondary schools. At the elementary school level, however, only nine States, typically with small enrollments, have ratios as favorable or more favorable than the 25:1 criterion. An estimated 43,500 additional teachers are needed to achieve the preferred elementary school ratio in the remaining States.

Nursery and Kindergarten Teachers.—Population and enrollment characteristics of 3–5-year-olds are presented in tables 9 and 10. Because school enrollment at these ages is not mandatory, the need for preschool teachers is somewhat different from that for elementary and secondary teachers.

For both groups of teachers, the concern is to increase the number of teachers to more effectively serve present enrollments. For 3–5-year-olds there is an additional concern—to increase the number of children attending school either for the purpose of preparing poor children for first grade or to begin earlier the benefits of educational experience for many children who are fully capable at these ages.

Although over three-quarters of 5-year-olds are enrolled, much smaller proportions of 3- and 4-year-olds are enrolled, approximately 7 and 21 percent respectively. How adequate is the present number of preschool teachers for the present enrollment? From table 4 in this section it can be seen that public schools employ about 43,000 preprimary teachers. The same survey gives 2.4 million pupils in the preprimary grades in the public schools. The pupil-teacher ratio, conservatively assuming that all teachers are working full time and that all pupils are in halfday programs, is 28.4:1, compared with the recommended ratio of 20:1. An additional 17,000 preschool teachers are required in the public schools to reduce the present pupil-teacher ratio to a more desirable and effective level. Finally, to put the 17,000 figure into perspective, it represents 40 percent of the present number of preschool teachers and 380 percent of the number of degrees granted in 1966–67 in nursery, kindergarten, and early childhood education.

What is the need for additional teachers to meet very moderate further increases in the number of children enrolled in preprimary school? The answer is given in table 12. Target enrollment projections were established which seem to be realistic in view of changes in enrollment that have occurred during the period from October 1964 to October 1967 (table 11). Ten percent for 3-year-olds, 25 percent for 4-year-olds, and 80 percent for 5-year-olds were used. These represent increases of 3.2 percent, 2.7 percent, and 3.9 percent for 3-, 4-, and 5-year-olds,

TABLE 11.—*Population of 3–5-year-olds and school enrollment, by level, United States, October 1964 and October 1967, and percent change, 1964 to 1967*

[In thousands]

	1964	1967	Percent change
Population:			
3–5 years old	12,496	12,242	− 2.0
3 years old	4,238	3,998	− 5.8
4 years old	4,148	4,088	− 1.4
5 years old	4,110	4,161	+ 1.5
Enrollment:			
3–5 years old	3,643	4,312	+18.4
3 years old (preprimary)	181	273	+50.8
4 years old (preprimary)	617	872	+41.3
5 years old (total)	2,845	3,167	+11.3
Preprimary	2,389	2,723	+14.0
Primary	456	444	− 2.8
Percent of population enrolled in preprimary and primary:			
3–5 years old	29.2	35.2	+20.5
3 years old (all preprimary)	4.3	6.8	+58.1
4 years old (all preprimary)	14.9	21.3	+43.0
5 years old (total)	69.2	76.1	+10.0
Preprimary	58.1	65.4	+12.6

Source: For 1967, data were collected for the National Center for Educational Statistics, U.S. Office of Education, by the Bureau of the Census through *Current Population Survey, October 1967*. For 1964, *Enrollment of 3-, 4-, and 5-year-olds in Nursery Schools and Kindergartens, October 1964*, National Center for Educational Statistics, U.S. Office of Education, June 1965.

TABLE 12.—*Population of 3,- 4-, and 5-year-olds, number and percent enrolled in preprimary schools, target enrollment percents and numbers, and need for additional teachers at selected ratios: United States, October 1967*

Age of child	Population	Enrollment in preprimary	Percent of population enrolled	Specified percent of population enrolled	Number of 3–5 years old enrolled at new percents	Net increase	Additional[1] teachers needed at 20 to 1 ratio	Additional[2] teachers needed at 40 to 1 ratio
Total	12,242,000	3,868,000	----	----	4,750,100	438,100	21,905	10,9[illegible]
3 years old	3,993,000	273,000	6.8	10.0	399,300	126,300	6,315	3,157
4 years old	4,088,000	872,000	21.3	25.0	1,022,000	150,000	7,500	3,750
5 years old	4,161,000	[3] 3,167,000	76.1	80.0	3,328,800	161,000	8,090	4,045

[1] For single sessions the recommended ratio by the National Education Association is 20 to 1. The Head Start recommendation is that 1 teacher and at least 1 other adult are necessary for every 15 children.

[2] Double sessions.

[3] Includes 444,000 5-year-olds enrolled in primary grades.

Source: Data collected for the National Center for Educational Statistics, U.S. Office of Education by the Bureau of the Census through the *Current Population Survey, October 1967*.

respectively, above the present enrollment proportions.

To provide the teachers necessary to serve these additional pupils for single sessions at a ratio of 20:1, 22,000 new teachers would be required. For double sessions at a ratio of 40:1, 11,000 new teachers would be required.

The total minimum need for additional preprimary teachers is 28,000, of which 17,000 are needed to reduce present pupil-teacher ratios, and 11,000 to meet small increases in enrollment.

Even this large number may not be sufficient. Experience suggests that one adult cannot deal adequately with 20 children of these ages in a classroom situation. Head Start and many other groups recommend at least two adults in the classroom; the adult who supports the teacher may well be an aide. This arrangement requires one additional aide for each additional teacher.

Table 13 shows the percentages of 3-, 4-, and 5-year-olds in selected categories (region, residence by urbanization, family income) enrolled in school. Table 14 provides information on the same characteristics of children not now enrolled, who would be expected to benefit from the expansion of preprimary programs.

3-year-olds.—About 7 percent of these children are enrolled in school. Some variation exists by region of the country; 9 percent of the children in the West are enrolled compared with less than 5 percent of the children in the North-Central States. There is also some variation by size of community; in central cities of Standard Metropolitan Statistical Areas, 9 percent are enrolled, while only 4.5 percent of those who reside outside metropolitan areas are enrolled.

Family income bears a much stronger relation to school attendance of 3-year-olds. About 4 percent of those in families with incomes of less than $7,500 are enrolled, but almost 15 percent of those in families with incomes over $10,000 are enrolled.

4-year-olds.—About three times as many 4-year-olds as 3-year-olds are enrolled in school. When multiplied by a factor of 3, most percentages for 3-year-olds will approximate the percentages for 4-year-olds. That is, the general relationships found for 3-year-olds apply to 4-year-olds.

5-year-olds.—More than three-fourths of these children are enrolled in school, although school attendance for children aged 5 is not mandatory. The same general relationships found for 3- and for 4-year-olds will obtain here, but the specifics of the relationships and their magnitudes are somewhat different. With respect to region, about half the 5-year-olds in the South are enrolled, while at least 84 percent of the 5-year-olds in every other region of the country are enrolled. More than 80 percent of the children in the metropolitan areas are enrolled, but only 62 percent are enrolled in the nonmetropolitan areas. Finally, almost 90 per-

TABLE 13.—*Percent of 3-, 4-, and 5-year-olds in selected categories enrolled in schools: United States, October 1967*

Categories	Total, 3–5-year-olds			3-year-olds			4-year-olds			5-year-olds		
	Total	Enrolled	Not enrolled	Total	Enrolled	Not enrolled	Total	Enrolled	Not enrolled	Total	Enrolled	Not enrolled
Total, United States	100.0	35.2	64.8	100.0	6.9	93.1	100.0	21.2	78.8	100.0	76.1	24.9
Region:[1]												
Northeast	100.0	39.9	60.1	100.0	6.7	93.3	100.0	23.9	76.1	100.0	89.4	10.6
North-central	100.0	36.0	64.0	100.0	4.8	95.2	100.0	15.8	84.2	100.0	84.4	15.6
South	100.0	27.2	72.8	100.0	7.6	92.4	100.0	21.5	78.5	100.0	52.3	47.7
West	100.0	42.1	57.9	100.0	9.0	91.0	100.0	26.3	73.7	100.0	87.4	12.6
Residence:[2]												
Central cities of SMSA's	100.0	40.6	59.4	100.0	9.0	91.0	100.0	26.8	73.2	100.0	83.6	16.4
Remainder of SMSA's	100.0	40.1	59.9	100.0	7.6	92.4	100.0	26.2	73.8	100.0	85.5	14.5
Nonmetropolitan	100.0	26.6	73.4	100.0	4.5	95.5	100.0	12.4	87.6	100.0	61.7	38.3
Family income:												
Under $3,000	100.0	26.7	73.3	100.0	4.1	95.9	100.0	15.6	84.4	100.0	59.4	40.6
$3,000–$4,999	100.0	28.7	71.3	100.0	4.3	95.7	100.0	18.8	81.2	100.0	64.1	35.9
$5,000–$7,499	100.0	31.7	68.3	100.0	4.4	95.6	100.0	17.4	82.6	100.0	73.6	26.4
$7,500–$9,999	100.0	37.4	62.6	100.0	6.0	94.0	100.0	19.9	80.1	100.0	85.0	15.0
$10,000 and more	100.0	48.3	51.7	100.0	14.7	85.3	100.0	34.8	65.2	100.0	89.5	10.5

[1] List of States by region—Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont; North-central: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin; South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia; West: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming, Alaska, Hawaii.

[2] Each Standard Metropolitan Statistical Area (SMSA) contains at least 1 city of at least 50,000 inhabitants, the entire county in which it is located, and contiguous counties economically and socially related with the central city. The classification given comprises the central cities, the remainder of the SMSA's, and those areas not included within SMSA's, i.e., nonmetropolitan areas.

Source: Data collected for the National Center for Educational Statistics, U.S. Office of Education, by the Bureau of the Census through the *Current Population Survey*, October 1967.

cent from the highest income families are enrolled compared with only 60 percent from the lowest income families. (For purposes of comparison, the Bureau of the Census reports that over 99 percent of the population in ages 6 through 13 are enrolled in the schools.)

The data in table 13 relate factors of region, residence, and family income to school enrollment of 3- to 5-year-olds. Table 14 translates the same basic data into statements of which children would be the possible beneficiaries of expanded preprimary schooling. This table shows the characteristics of the children who are not enrolled in schools.

3-year-olds.—Table 13 demonstrates that few children of this age are enrolled in a school. Hence, children in all regions and localities and at all income levels might be benefited by expanded facilities. There is reason to believe, however, that the expansion would not be "across the board." This is discussed below, following the discussion of data on 5-year-olds.

4-year-olds.—The comments for 3-year-olds generally apply to 4-year-olds. The reader may note that the distributions for 3- and 4-year-olds are quite similar.

5-year-olds.—Three factors stand out for this group: 62 percent of the children not enrolled are in the South; 60 percent of those not enrolled reside in nonmetropolitan areas; and 72 percent of those not enrolled are in families with incomes less than $7,500 a year. The appropriate data are not available, but it may be expected that a sizable and very disproportionate number of the nonenrolled children in the United States live in the nonmetropolitan areas of the South and are in families with incomes below $7,500.

Corroboration of this suggestion is afforded by other statistics not included in

TABLE 14.—*Percent of 3-, 4-, and 5-year-olds not enrolled in school by selected characteristics and single years of age: United States, October 1967*

Selected characteristics	Total, all ages	3-year olds	4-year olds	5-year olds
Region:[1]				
Total, United States	100.0	100.0	100.0	100.0
Northeast	21.0	22.5	22.9	9.8
North-central	28.1	28.8	30.1	19.0
South	35.0	31.9	30.3	61.7
West	15.9	16.8	16.7	9.5
Residence:[2]				
Total, United States	100.0	100.0	100.0	100.0
Central cities of SMSA's	25.1	26.2	25.8	19.0
Remainder of SMSA's	32.8	35.4	33.4	21.0
Nonmetropolitan	42.1	38.4	40.8	60.0
Family income:				
Total, United States	100.0	100.0	100.0	100.0
Under $3,000	12.3	11.3	11.5	18.5
$3,000–$4,999	17.7	16.8	17.2	23.1
$5,000–$7,499	29.7	30.3	28.5	30.5
$7,500–$9,999	18.6	19.2	19.9	12.1
$10,000 and more	14.8	15.8	15.7	8.6
Income not reported	6.9	6.6	7.2	7.2

[1] See footnote 1 to table 13.

[2] See footnote 2 to table 13.

Source: Data collected for the National Center for Educational Statistics, U.S. Office of Education, by the Bureau of the Census through the Current Population Survey, October 1967.

this appendix. Twenty-three States reported no State aid for public school kindergartens for 1967–68. Twelve of the 23 are Southern States. In 1968–69, 17 States reported providing no State aid for public school kindergartens of which 10 States were in the Southern region.

The data in table 13 indicate that the opportunity to attend nursery school or kindergarten is very much dependent upon where the child lives (urban—nonmetropolitan) and upon family income. Regional differences are sizable too with North-Central States showing below average opportunity for 3- and 4-year-olds, and the Southern States for 5-year-olds.

Staff Specialists.—Tables 15 through 17 provide estimates of the needs in the public schools for speech therapists, school psychologists, guidance counselors, and librarians. These figures should be considered as minimum estimates:

—It was assumed that schools with enrollments of less than 250 could not support any of these specialists. That assumption resulted in the exclusion of more than 1 million elementary pupils and about 1 million secondary pupils in small schools.

—No account has been taken of schools with enrollments of 250 or more which were inadequately staffed with specialists. A high school enrolling more than 1,000 pupils which has one part-time librarian, inadequately staffed in this respect, is not included in the estimation procedure. (One million elementary pupils and 200,000 secondary pupils attended schools staffed with only one part-time librarian, for example.)

—No account has been taken of the possible needs in nonpublic schools.

Approximately 5,400,000 pupils attended schools without the service of a librarian. To provide adequate services to these schools, 15,517 librarians are needed. Most of the needed librarians are for elementary schools. That is, of the more than 15,000 additional librarians needed, all but 1,100 are for the elementary level. When these data were collected in the fall of 1965, more than 5,400,000 public school pupils in the United States attended schools which did not have even one part-time librarian in the school. Five million of these pupils were enrolled in elementary schools.

Even more pupils attended schools which did not have the services of counselors and speech therapists, about 12,000,000 in each instance. However, the needs for additional staff in these two specialties are smaller than for librarians. In the case of guidance counselors, a larger pupil-specialist ratio is deemed appropriate. Speech therapists, although subject to a smaller pupil-specialist ratio than librarians, work with a much smaller segment of the pupil population. An additional 8,100 guidance counselors and an additional 3,500 speech therapists are needed.

Table 16 shows the number of additional

TABLE 15.—*Number of pupils attending public schools without selected staff specialists by region, level, size of school, and number of additional specialists needed: United States, 1965*[1]

	School size (number of pupils[2]) and level								Total		Standard pupil/specialist		Number of specialists needed to provide services at standard level		Total specialists needed
	250–499		500–749		750–999		1,000 or more								
	Elementary	Secondary	Elementary	Secondary	Elementary	Secondary	Elementary	Secondary	Elementary	Secondary	Elementary	Secondary	Elementary	Secondary	
United States:															
No speech therapist	2,595,732	1,625,766	1,964,568	1,074,366	869,076	1,249,332	547,806	2,423,112	5,977,182	6,372,576	[3] 0.035/125	0.035/125	1,673	1,784	3,457
No school psychologist	1,303,848	634,848	639,636	434,850	463,962	280,074	156,738	499,140	2,564,184	1,848,912	[4] 2,500/1	2,500/1	1,026	739	1,765
No guidance counselor	4,167,432	475,788	4,390,758	163,080	1,797,690	35,676	751,092	83,838	11,106,972	758,382	[5] 2,000/1	300/1	5,553	2,528	8,081
No librarian	2,293,992	115,500	1,971,168	59,472	533,412	4,818	250,890	202,026	5,049,462	381,816	[6] 350/1	350/1	14,426	1,091	15,517
Northeast:[7]															
No speech therapist	72,192	71,490	137,334	156,150	28,770	147,090	14,802	458,166	253,098	832,896	.035/125	.035/125	71	233	304
No school psychologist	14,352	([8])	11,862	([8])	6,108	498	42,972	57,702	75,294	58,200	2,500/1	2,500/1	30	23	53
No guidance counselor	494,076	([8])	677,718	([8])	422,634	([8])	264,372	([8])	1,858,800	([8])	2,000/1	300/1	929	([8])	929
No librarian	391,776	8,670	157,182	([8])	29,580	([8])	35,844	18,150	614,382	26,820	350/1	350/1	1,755	77	1,832
Great Lakes and Plains:[7]															
No speech therapist	132,618	180,936	127,590	120,996	44,796	28,296	60,840	183,192	365,844	513,420	.035/125	.035/125	102	144	246
No school psychologist	80,622	89,718	124,668	94,986	86,088	24,336	([8])	([8])	291,378	209,040	2,500/1	2,500/1	117	84	201
No guidance counselor	435,990	([8])	675,204	33,366	381,138	([8])	110,394	([8])	1,602,726	33,366	2,000/1	300/1	801	111	912
No librarian	286,866	33,558	370,920	31,992	86,370	([8])	98,142	([8])	842,298	65,550	350/1	350/1	2,406	187	2,593
Southeast:[7]															
No speech therapist	1,084,590	403,218	1,243,386	551,790	266,868	696,648	328,242	822,816	2,923,086	2,474,472	.035/125	.035/125	818	693	1,511
No school psychologist	442,392	180,492	344,622	274,968	55,956	139,770	112,362	148,608	955,332	743,838	2,500/1	2,500/1	382	297	679
No guidance counselor	1,244,340	188,358	1,212,204	100,800	290,046	23,340	275,688	83,838	3,022,278	396,336	2,000/1	300/1	1,511	1,321	2,832
No librarian	461,586	18,852	372,252	27,480	50,706	4,818	43,038	([8])	927,582	51,150	350/1	350/1	2,650	146	2,796
West and Southwest:[7]															
No speech therapist	1,306,332	970,122	456,258	245,430	528,642	377,298	143,922	958,938	2,435,154	2,551,788	.035/125	.035/125	682	714	1,396
No school psychologist	766,482	364,638	158,484	64,896	315,810	115,470	1,404	292,830	1,242,180	837,834	2,500/1	2,500/1	497	335	832
No guidance counselor	1,993,026	287,430	1,825,632	28,914	703,872	12,336	100,638	([8])	4,623,168	328,680	2,000/1	300/1	2,312	1,096	3,408
No librarian	1,153,764	54,420	1,070,814	([8])	366,756	([8])	73,866	183,876	2,665,200	238,296	350/1	350/1	7,615	681	8,296

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[1] Based on special analysis for this report of data from *Equality of Educational Opportunity*, National Center for Educational Statistics, U.S. Department of Health, Education, and Welfare, Washington, D.C. 1966.

[2] Only grades 6 and 12 data are used. The total 1–6 grades for elementary pupils and the total 7–12 grades for secondary pupils were estimated by multiplying the number of pupils of grade 6 by 6 for elementary and multiplying the number of grade 12 pupils by 6 for the secondary. The figures are the minimum since no allowance for attrition was made.

[3] The incidence rate of 3.5 percent of the pupil population was estimated by Romaine Mackie in her unpublished study *Statistics of Special Education for Exceptional Children, 1963.*

[4] Maximum ratio recommended by the American Psychological Association.

[5] Suggested guidance counselor-pupil ratio, National Education Association, Division of Research: *Teacher Supply and Demand in Public Schools, 1967.* (Copyright 1967 by the National Education Association. All rights reserved.)

[6] For both elementary and secondary schools the recommended ratios by the American Library Association is one librarian for 300 pupils up to 900 and an additional librarian for each additional 400 pupils. Since the range of each school size is 249, 350 pupil-librarian ratio is used here.

[7] Northeast: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and District of Columbia; Great Lakes and Plains: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; Southeast: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia; West and Southwest; Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oklahoma, Oregon, Texas, Utah, Washington, and Wyoming.

[8] Sample number is too small for reliable estimate.

TABLE 16.—*Number of selected staff specialists needed in public elementary and secondary schools, by region: United States, fall 1965*

Specialist and school level	Total	Region[1]			
		Northeast	Great Lakes and Plains	Southeast	West and Southwest
Speech therapists:					
Total:	3,457	304	246	1,511	1,396
Elementary	1,673	71	102	818	682
Secondary	1,784	233	144	693	714
School psychologist:					
Total:	1,765	53	201	679	832
Elementary	1,026	30	117	382	497
Secondary	739	23	84	297	335
Guidance counselors:					
Total:	8,081	929	912	2,832	3,408
Elementary	5,553	929	801	1,511	2,312
Secondary	2,528	(2)	111	1,321	1,096
Librarians:					
Total:	15,517	1,832	2,563	2,796	8,296
Elementary	14,426	1,755	2,406	2,650	7,615
Secondary	1,091	77	187	146	681

[1] For list of States in each region see table 13.

[2] Sample number is too small for reliable estimate.

Source: Based upon a special analysis for this report of data from *Equality of Educational Opportunity*, National Center for Educational Statistics, Office of Education, U.S. Department of Health, Education, and Welfare, Washington, D.C.

staff specialists needed for each region of the country. Generally speaking, most of the additional staff specialists are needed in the Southeast and in the West and Southwest. As was the case for the Southeast region for preprimary schools, here too this region may be characterized as trying to "catch up" with the other regions. The West and Southwest regions may be characterized as trying to "staff up" to meet large year-to-year increases in enrollments. California, in which over 100,000 more pupils were enrolled in public schools in the fall of 1967 than in the preceding fall, illustrates the problem of "staffing up."

Table 17 provides estimates of additional staff specialists needed by size of school enrollment. At the elementary level more specialists in each category are needed for the smaller schools than for the larger schools. There is no discernible pattern at the secondary level; more speech therapists and librarians are needed for the larger schools while more guidance counselors are needed for the smaller schools.

Teachers of the Handicapped.—The number of teachers of the handicapped needed is truly staggering, more than 230,000. These data are presented in table 18. Half of the number needed is for teachers of the emotionally disturbed; another quarter is for teachers of the mentally retarded. The ex-

TABLE 17.—*Number of selected staff specialists needed in public elementary and secondary schools, by enrollment size of school: United States, fall 1965*

	Elementary school size					Secondary school size				
	Total	250–499	500–749	750–999	1,000 or more	Total	250–499	500–749	750–999	1,000 or more
Staff specialists needed:										
Speech therapists	1,673	727	550	243	153	1,784	455	301	350	678
School psychologists	1,026	521	257	186	62	739	253	174	112	200
Guidance counselors	5,553	2,082	2,193	900	378	2,528	1,585	544	118	281
Librarians	14,426	6,550	5,626	1,529	721	1,091	331	170	13	577

Source: Based upon a special analysis for this report of data from *Equality of Educational Opportunity*, National Center for Educational Statistics, Office of Education, U.S. Department of Health, Education, and Welfare, Washington, D.C.

TABLE 18.—*Estimated demand for teachers and specialists in areas of handicapped: United States, 1968–69*

Area of handicap	Estimated number of school-age population (5–17) in need of services [1] (1)	Number of children receiving services (2)	Additional children requiring services [2] (3) = (1) − (2)	Preferred teacher-pupil ratios (4)	Additional teachers and specialists needed to extend services (5) = (3) ÷ (4)	Number of teachers and specialists currently employed (6)	Additional teachers and specialists needed per year for replacement [3] (7)	Total teachers and specialists needed (8) = (5) + (7)
Visually handicapped	52,378	25,571	26,807	10	2,681	2,566	205	2,886
Deaf	39,283	33,843	5,440	7	777	5,205	416	1,193
Hard of hearing	261,890	20,700	241,190	20	12,060	1,080	86	12,146
Speech handicapped	1,833,230	987,000	846,230	80	10,578	11,067	885	11,463
Crippled and other health impaired	261,890	147,855	114,035	15	7,602	12,810	1,024	8,626
Emotionally disturbed	1,047,560	120,400	927,160	8	115,895	9,950	796	116,691
Mentally retarded	1,204,694	545,555	659,139	13	50,703	37,241	2,979	53,682
Specific learning disabilities	523,780	20,388	503,392	20	25,170	3,940	315	25,485
Total	5,224,705	1,901,312	3,323,393	--------	225,466	83,859	6,706	232,172

[1] School-age population (5–17) for 1968–69 was derived from *Projections of Educational Statistics to 1975–76*, U.S. Office of Education. Figures in column (1) were arrived at by multiplying school-age population by prevalence rates.

[2] *Estimates of Current Manpower Needs in Education for the Handicapped* (unpublished) Bureau of Education for the Handicapped, U.S. Office of Education.

[3] Although the turnover rate for teachers and specialists of the handicapped have not been established, the gross turnover rate of 8 percent established for classroom teachers has been applied as an estimate.

Source: U.S. Department of Health, Education, and Welfare, Office of Education, Bureau of Education for the Handicapped, Washington, D.C. (unpublished data).

tent of the shortage may be appreciated by referring to the number of degrees conferred at all levels for teachers of the handicapped. In 1966–67 about 6,000 degrees were awarded (see table 19), of which slightly more than 300 degrees were in education of the emotionally disturbed and fewer than 1,900 degrees were in education of the mentally retarded.

Degrees Conferred in Education and Related Fields

A total of 185,800 degrees were conferred in education and related fields in 1966–67. The figure for education graduates does not include a sizable group of graduates who majored in subject fields other than education but were prepared to teach in secondary schools. (See Appendix A on "Persons Who Have Entered and Plan to Enter Teaching.") In terms of potential supply of teachers, the total represents only a small portion of the total supply available to meet the total need of 551,000 teachers.

Detailed data on the number of degrees conferred by level and by field of study are presented in table 19. These data can be compared with the findings in tables 7 through 18 for an indication of the extent to which current graduates in education can meet current needs for professional educational personnel.

TABLE 19.—*Degrees conferred in education and related fields by level of degree: aggregate United States, 1966–67*

Field	Total	Bachelor's [1]	Master's	Doctor's
Total, all fields	185,753	121,443	60,700	3,610
General teaching fields	88,109	72,042	15,626	441
Nursery or kindergarten	608	481	124	3
Early childhood education	3,816	3,542	271	3
Elementary education	74,800	64,595	10,040	165
Secondary education [2]	7,309	2,852	4,305	152
Combined elementary and secondary education	795	472	320	3
Other general teaching fields	781	100	566	115
Specialized teaching fields	61,129	46,041	14,430	658
Physical education	16,689	13,473	3,052	164
Teachers of the handicapped	5,979	3,819	2,093	67
Education of the partially sighted	33	22	11	0
Education of the blind	72	24	47	1
Education of the mentally retarded	1,850	1,054	784	12
Education of the emotionally disturbed	313	129	175	9
Education of the deaf	282	134	147	1
Education of the crippled	120	78	42	0
Speech and hearing	3,309	2,378	887	44
Vocational education	15,762	12,934	2,677	151
Agricultural education	1,451	967	451	33
Business education, commercial education	7,588	6,315	1,224	49
Distributive education, retail selling	396	265	123	8
Home economics education	5,103	4,582	509	12
Trade and industrial	1,224	805	370	49
Other specialized teaching fields	22,699	15,815	6,608	270
Other education fields	36,515	3,360	30,644	2,511
Auxiliary services	13,849	832	12,474	543
Guidance and counseling [3]	7,459	24	7,111	324
School psychology	1,184	107	874	203
Librarians [4]	5,206	701	4,489	16
Educational administration, supervision, or finance	7,973	39	7,230	704
Other nonteaching fields	14,693	2,489	10,940	1,264

[1] Includes five first-professional degrees.

[2] Secondary education graduates are only part of the total supply of secondary teachers because additional secondary teachers come from graduates majoring in subject fields other than education. (See Appendix A section, "Persons Who Have Entered and Plan to Enter Teaching.")

[3] Includes counseling psychology offered in departments of psychology and counseling and guidance offered in schools of education.

[4] Includes all library science degrees; not limited to school librarians.

Source: U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, *Earned Degrees Conferred, 1966–67.*

Selected Characteristics of Public Elementary and Secondary Teachers

This section describes teacher characteristics by statistical profiles of public elementary and secondary school teachers. The amount of data presented is so large that only highlights are brought out here.

Table 20 presents characteristics of public elementary and secondary school teachers for 1960–61 and for 1965–66.

Sex.—Women constitute slightly less than half the secondary school teachers but nine-tenths of the elementary school teachers.

Age.—In 1965–66 the teaching force

Table 20.—*Percent of public elementary and secondary school teachers by sex with selected personal and professional characteristics, 1960–61 and 1965–66*

[By percent]

	Elementary		Secondary					
	1960–61	1965–66	1960–61			1965–66		
			Total	Men	Women	Total	Men	Women
Sex:								
Male	12.2	10.2	56.8	100.0	(1)	54.2	100.0	(1)
Female	87.8	89.8	43.2	(1)	100.0	45.8	(1)	100.0
Age:								
Under 26	11.9	15.4	13.7	12.4	15.4	17.1	11.1	24.2
26–35	20.5	23.2	36.4	48.9	20.0	36.5	46.0	25.0
36–45	20.9	17.0	20.4	20.0	20.8	21.5	25.8	16.4
46–55	28.9	21.7	20.0	13.5	28.6	14.5	11.5	18.2
56 or over	17.8	22.7	9.5	5.2	14.3	10.4	5.7	16.2
Median age	44.6	40.0	35.9	33.7	42.6	33.0	32.0	35.0
Highest college degree held:								
Less than bachelor's	23.8	12.9	2.3	2.4	2.3	.6	.6	.4
Bachelor's	62.2	71.4	61.6	54.6	70.8	67.7	62.4	73.9
More than bachelor's	14.0	15.7	36.1	43.0	26.9	31.7	37.0	25.7
Total years of full-time teaching experience:								
Less than 3 years	11.6	16.2	18.0	20.7	14.3	21.0	18.4	24.0
3–9	29.4	32.0	36.9	43.1	28.2	40.6	46.7	33.4
10–19	26.8	25.1	23.5	21.9	25.9	22.8	24.5	20.7
20 or more	32.2	26.7	21.6	14.3	31.6	15.7	10.4	21.9
Median years	13.3	10.0	8.8	7.2	12.4	7.0	7.0	7.2
Annual salary as teacher:								
Median salary	$4,974	$5,745	$5,332	$5,538	$5,084	$6,030	$6,300	$5,700
Teacher's willingness to teach if could "start over again":								
Would become a teacher	83.0	84.1	68.5	61.3	78.0	71.4	62.1	82.2
May or may not	9.9	10.0	16.1	19.5	11.6	16.1	20.5	10.8
Would not become a teacher	7.1	5.9	15.4	19.2	10.4	12.6	17.3	6.9
Primary field in which teaching–secondary schools:								
Agriculture	(1)	(1)	2.6	4.6	0	1.6	2.9	0
Art	(1)	(1)	2.2	1.6	2.9	2.0	1.5	2.6
Business education	(1)	(1)	7.6	5.3	10.5	7.0	4.9	9.5
English	(1)	(1)	19.0	11.2	28.9	18.1	11.4	26.1
Foreign languages	(1)	(1)	4.1	2.5	6.1	6.4	4.2	9.1
Health and physical education	(1)	(1)	8.2	8.7	7.6	6.9	6.6	7.8
Home economics	(1)	(1)	5.1	0.0	11.7	5.9	0.0	13.0
Industrial art, vocational	(1)	(1)	5.5	9.8	0.0	5.1	9.3	0
Mathematics	(1)	(1)	11.4	13.3	9.1	13.9	15.0	12.6
Music	(1)	(1)	1.7	2.3	.9	4.7	5.4	3.8
Science	(1)	(1)	11.7	17.0	5.0	10.8	15.7	5.1
Social studies	(1)	(1)	12.9	15.8	9.1	15.3	19.4	10.5
Other[2]	(1)	(1)	8.0	7.9	8.2	2.3	3.7	.4
Percent of teachers teaching all of their time in the same field as that of major preparation	73.5	74.2	62.2	62.3	62.3	66.2	61.8	71.5
(Number)	(1,071)	(1,230)	(810)	(460)	(350)	(1,114)	(604)	(510)

[1] Not applicable.

[2] The questions asked were slightly different each year.

Source: National Education Association, Research Division, *The American Public School Teacher 1960–61*, and *The American Public School Teacher, 1965–66*. (Copyrights 1963 and 1967 by the National Education Association. All rights reserved.)

was younger than it was in 1960–61. Secondary school teachers tend to be younger than elementary school teachers and men secondary teachers younger than women secondary teachers. The ages of women secondary teachers decreased sharply from 1960 to 1965—the median age for them decreased by 7 years. The age distribution for men secondary teachers is notably skewed—a great many seem to "disappear" from teaching after the age of 35.

Experience.—The findings for length of experience are consistent with those for age. The respective medians for elementary and secondary teachers were 10.0 years and 7.0 years in 1965–66. In general women secondary teachers had 5 years more experience than men in 1960–61, (medians of 12 years and 7 years) and this difference had, by 1965–66, narrowed to a fraction of a year (7.2 and 7.0 as medians). The median experience for elementary teachers declined by 3 years over this 5-year period.

Preparation.—In 1965–66 relatively few teachers, especially at the secondary level, did not have at least a bachelor's degree. The percentage of men secondary teachers with more than a bachelor's degree decreased during the period 1960–61 to 1965–66.

Salary.—The salaries of secondary school teachers, on the average, are higher than those for elementary school teachers. This difference is accounted for by the higher salaries earned by men secondary teachers, as the median salary for women secondary teachers is similar to that for elementary school teachers. (It should be recalled that 90 percent of the elementary teachers are women.) Teacher salaries usually reflect both experience and sex and, as has been shown, women secondary teachers have attained higher levels of preparation than elementary teachers; however, elementary teachers have more experience than do women secondary teachers. Therefore, these factors seem to balance out, resulting in the similar median salaries for the women secondary and elementary school teachers.

Primary field taught (secondary).—About 60 percent of the secondary teachers teach primarily in one of the academic areas: English, mathematics, science and social studies. (Characteristics of secondary teachers by field appear in Tables 22–26.)

Teaching in field of major study.—Nearly three-fourths of the elementary school teachers and two-thirds of the secondary school teachers teach only in the fields of their major preparation.

Table 21 presents the characteristics of teachers in elementary schools receiving funds in 1967–68 under title I of the Elementary and Secondary Education Act. These schools are distinguished by heavy concentrations of pupils from low-income families.

Compared to teachers in all public elementary schools in 1965–66 (table 21), the teachers in title I schools have approximately the same experience and slightly greater preparation levels.

Arrangements usually considered innovative are not generally characteristic of the classroom organizations within which teachers in title I schools teach. About one-fifth have the services of a teacher aide at least part time. One-ninth instruct ungraded or multigraded classes. Only 9 percent participate in "team teaching."

The characteristics of secondary school teachers by type of high school (comprehensive or vocational) and by subject area taught are provided in tables 22 through 26.

Age.—Teachers of vocational subjects tend to be older than teachers of academic subjects, and teachers in vocational schools are generally older than teachers in comprehensive high schools (table 22).

Preparation.—There is considerable variation in preparation among the teachers in comprehensive high schools. About half the teachers of fine arts and one-third the teachers of physical education have degrees beyond the bachelor's. These fields represent the extremes, high and

TABLE 21.—*Selected characteristics of staff and classroom organization in title I ESEA elementary schools: United States, spring 1968*[1]

[By percent]

Staff:	
Principals (N=38,872):[2]	
Sex:	
Male	[3]15.1
Female	84.1
Teaching duties in addition to administration:	
No	64.9
Yes, only in emergencies	22.0
Yes, regularly scheduled classes	12.8
Assistant principal position in the school:	
No	85.7
Yes, but vacant	.5
Yes, filled	13.4
In-Service training:	
School participation in or sponsorship of formal in-service training program since July 1, 1967 for professional instructional staff:	
No	27.4
Yes	70.1

Teachers by grade (N=222,000)[2] *(N=80,000)*[2] *(N=75,000)*[2] *(N=67,000)*.[2]

	Total	Second	Fourth	Sixth
Sex:				
Male	13.0	0.4	8.0	33.4
Female	86.0	98.5	91.1	65.6
Highest earned degree:				
Less than bachelor's	10.4	11.1	11.5	8.4
Bachelor's	66.4	70.5	65.6	62.5
More than bachelor's	22.8	18.1	22.6	28.6
State teaching certification:				
Highest certification offered in this State	60.0	59.7	61.1	59.1
Certification, but less than the highest offered in this State	32.1	33.0	31.7	31.6
Temporary or emergency certification	6.4	5.8	5.8	7.8
Not certified	1.0	0.9	1.0	1.0
Teaching experience total:				
Less than 3 years	18.0	18.2	18.0	17.7
At least 3, less than 6	16.8	17.7	15.6	17.0
At least 6, less than 10	12.6	11.5	12.3	14.2
10 years or more	51.8	51.9	53.3	49.9
Teaching experience in this school:				
Less than 3 years	36.9	37.3	35.7	37.9
At least 3, less than 6	20.0	18.3	19.2	22.8
At least 6, less than 10	14.0	12.4	15.9	13.9
10 years or more	28.4	31.3	28.5	24.8
Classroom organization:				
I am the only teacher who teaches my whole class	38.4	46.1	37.7	30.1
One or more specialist teachers comes in to assist me with my whole class	59.6	59.4	61.3	58.0
I have the services of at least one part-time noncertified aide or assistant in my classroom	20.1	25.9	19.6	17.0
My class is ungraded: My class is made up of pupils who would, in most schools, be in 2 or more different grades	11.7	11.8	12.8	10.4
Departmentalized: I regularly meet with several classes each day to teach in a limited subject matter area	14.5	1.4	10.5	34.8
Team teaching	8.6	5.9	7.7	12.7
During the year another teacher held my particular teaching assignment with my class for at least 2 consecutive weeks (excludes other team teachers, specialist teachers, student teachers)	10.1	9.7	9.5	11.1

[1] Preliminary data. Title I (ESEA) schools are those eligible for Federal funds under title I of the Elementary and Secondary Education Act because of the concentration of economically disadvantaged pupils in their attendance areas. The spring 1968 national evaluation was a survey of title I eligible schools in a nationally representative sample of 465 local educational agencies (school districts). The data cover all 2nd, 4th, and 6th grade teachers and classes at these grades and are not limited to the title I supported activities in these schools.

[2] These are the estimated numbers in the populations sampled and are preliminary.

[3] Detail for all distributions will not total to 100 percent because of nonresponses.

Source: 1968 Uniform National Title I Evaluation, Bureau of Elementary and Secondary Education, U.S. Office of Education (unpublished data).

low, for teachers of academic subjects in comprehensive high schools (table 23).

The greatest contrast, however, is between teachers of vocational subjects in comprehensive and vocational high schools. In the vocational high schools, six times as many teachers of vocational subjects do not have bachelor's or higher degrees. It appears that principals of comprehensive high schools desire that teachers of vocational subjects, as well as those of academic subjects, have the bachelor's degree. The principals of vocational high schools, however, prefer that vocational teachers, except those in business education, have experience in vocational fields rather than academic credentials.

Field of highest degree.—Among teachers of academic subjects in comprehensive high schools, fine arts teachers most fre-

Private
Source: Based on data from the National Education Asso-
Administration ....
Total instructional ....

Table 22.—*Age of full-time teachers in comprehensive and vocational high schools by primary subject taught: United States, 1967*

Comprehensive high schools

Primary subject taught	Total: Number	Total: Percent[1]	Age: 20–30 years	Age: 31–40 years	Age: 41–55 years	Age: 56+ years
All subjects	7,304	100.0	36.1	25.0	27.2	8.9
Total academic	5,686	100.0	38.1	24.8	25.6	10.2
Social studies	1,040	100.0	35.6	28.9	24.3	9.8
English	1,474	100.0	40.3	18.7	27.0	12.4
Science	822	100.0	38.8	27.4	24.8	8.2
Mathematics	812	100.0	39.4	21.5	25.3	12.6
Foreign language	531	100.0	37.2	21.2	26.1	14.3
Fine arts	377	100.0	32.3	27.3	31.2	8.4
Physical education	630	100.0	38.8	34.7	22.6	3.8
Total vocational	1,618	100.0	29.1	25.5	32.7	10.5
Engineering technology	130	100.0	16.1	29.2	37.6	16.9
Automotive, trades	279	100.0	20.4	30.8	33.3	12.9
Business education	709	100.0	35.4	23.5	30.3	9.3
Agriculture, home economics	358	100.0	28.2	21.2	36.8	9.4
Other vocational	142	100.0	28.9	33.1	28.9	8.4

Vocational high schools

Primary subject taught	Total: Number	Total: Percent[1]	Age: 20–30 years	Age: 31–40 years	Age: 41–55 years	Age: 56+ years
All subjects	1,261	100.0	21.0	25.2	37.3	15.8
Total academic	565	100.0	30.7	28.1	26.7	13.6
Social studies	113	100.0	28.3	35.3	25.6	9.7
English	152	100.0	36.8	24.3	22.3	15.7
Other academic	300	100.0	28.7	27.3	29.3	14.0
Total vocational	696	100.0	13.0	22.8	45.9	17.6
Engineering technology	126	100.0	7.1	29.3	39.6	23.8
Automotive, trades	205	100.0	5.3	21.4	52.6	20.4
Business education	176	100.0	27.8	22.7	35.7	12.5
Other vocational	189	100.0	11.6	20.1	52.4	15.3

[1] Rows may not sum up to 100.0 percent due to rounding and to nonresponse.

Source: Based upon unpublished data from sample survey conducted in 1967 by the Bureau of Social Science Research, Inc., and supported in part by funds from the U.S. Office of Education, Bureau of Research.

Table 23.—*Highest degree earned by full-time teachers in comprehensive and vocational high schools by primary subject taught: United States, 1967*

Comprehensive high schools

Primary subject taught	Total: Number	Total: Percent[1]	Degree level: High school diploma[2]	Degree level: Asso-ciate's	Degree level: Bach-elor's	Degree level: Master's	Degree level: Doctor's
All Subjects	7,304	100.0	2.1	0.3	56.4	39.0	0.7
Total academic	5,686	100.0	1.2	.2	56.3	40.2	.8
Social Studies	1,040	100.0	.9	.4	52.9	44.0	.7
English	1,474	100.0	1.0	.2	60.1	36.8	.9
Science	822	100.0	1.2	.0	52.2	45.4	.5
Mathematics	812	100.0	1.5	.0	56.5	38.5	.5
Foreign language	531	100.0	1.5	.0	56.7	39.2	1.7
Fine arts	377	100.0	1.6	.3	48.3	49.3	.5
Physical education	630	100.0	1.7	.5	62.5	32.7	.8
Total vocational	1,618	100.0	5.2	.6	56.7	34.7	.4
Engineering technology	130	100.0	8.5	3.8	43.8	42.3	.0
Automotive, trades	279	100.0	13.6	.4	48.4	37.3	.7
Business education	709	100.0	1.7	.4	61.9	35.1	.8
Agriculture, home economics	358	100.0	1.4	.0	65.6	27.9	.6
Other vocational	142	100.0	12.7	.7	46.5	38.0	.7

Vocational high schools

Primary subject taught	Total: Number	Total: Percent[1]	Degree level: High school diploma[2]	Degree level: Asso-ciate's	Degree level: Bach-elor's	Degree level: Master's	Degree level: Doctor's
All subjects	1,261	100.0	21.3	1.0	44.3	30.3	0.4
Total academic	565	100.0	3.4	.4	54.3	40.4	.9
Social Studies	113	100.0	.0	.9	53.1	41.6	1.8
English	152	100.0	2.0	.0	60.5	36.2	.7
Other academic	300	100.0	5.3	.3	51.7	42.0	.7
Total vocational	696	100.0	35.9	1.6	36.1	22.1	.0
Engineering technology	126	100.0	48.4	3.2	27.0	19.8	.0
Automotive, trades	205	100.0	60.5	1.0	24.4	12.7	.0
Business education	176	100.0	1.7	.0	58.0	40.3	.0
Other vocational	189	100.0	32.8	2.6	34.4	16.9	.0

[1] Rows may not add up to 100.0 percent due to rounding and nonresponse.

[2] Includes certificate of apprenticeship and certificate of proficiency.

Source: Based upon unpublished data from a sample survey conducted in 1967 by the Bureau of Social Science Research, Inc., and supported in part by funds from the U.S. Office of Education, Bureau of Research.

TABLE 24.—*Years of full-time teaching experience of full-time teachers in comprehensive and vocational high schools by primary subject taught: United States, 1967*

Comprehensive high schools							
	Total		Years of experience				
Primary subject taught	Number	Percent	1 year	2–3 years	4–10 years	11–20 years	21+ years
All subjects	7,304	100.0	8.6	16.2	35.0	22.9	15.9
Total academic	5,686	100.0	8.9	16.1	35.8	22.5	15.5
Social studies	1,040	100.0	8.7	15.2	38.1	22.1	14.5
English	1,474	100.0	10.7	17.6	33.3	19.1	17.9
Science	822	100.0	8.7	15.9	38.8	21.5	13.9
Mathematics	812	100.0	8.0	16.0	36.3	21.1	17.7
Foreign language	531	100.0	9.2	20.5	28.6	23.3	16.7
Fine arts	377	100.0	6.1	13.5	32.0	30.7	16.7
Physical education	630	100.0	7.6	12.5	41.1	29.0	8.8
Total vocational	1,618	100.0	7.9	16.4	32.8	24.0	17.8
Engineering technology	130	100.0	4.6	16.1	31.5	27.6	18.4
Automotive, trades	279	100.0	4.6	16.1	32.9	24.7	18.2
Business education	709	100.0	8.8	18.0	32.1	23.1	17.0
Agriculture, home economics	358	100.0	8.6	12.0	30.4	23.4	20.9
Other vocational	142	100.0	10.6	20.4	36.6	25.4	6.3

Vocational high schools							
	Total		Years of experience				
Primary subject taught	Number	Percent	1 year	2–3 years	4–10 years	11–20 years	21+ years
All subjects	1,261	100.0	9.1	11.5	37.2	23.3	17.2
Total academic	565	100.0	11.5	11.5	36.1	23.1	16.2
Social studies	113	100.0	12.8	7.0	36.2	26.5	16.8
English	152	100.0	14.4	13.1	38.1	16.4	15.1
Other academic	300	100.0	9.7	12.3	35.0	25.3	16.7
Total vocational	696	100.0	7.1	11.6	38.2	23.4	17.9
Engineering technology	126	100.0	6.8	13.4	38.0	23.0	17.4
Automotive, trades	205	100.0	6.3	11.7	35.1	23.4	22.4
Business education	176	100.0	7.3	13.0	40.9	21.5	15.9
Other vocational	189	100.0	8.5	9.0	39.2	25.4	15.4

[1] Rows may not add up to 100.0 percent due to rounding and nonresponse.

Source: Based upon unpublished data from a sample survey conducted in 1967 by the Bureau of Social Science Research, Inc., and supported in part by funds from the U.S. Office of Education, Bureau of Research.

quently (81 percent) and mathematics teachers least frequently (56 percent) reported their highest degrees to be in the same fields they teach. Among teachers of vocational subjects, teachers of engineering technology, especially in comprehen-

TABLE 25.—*Relation of field of highest degree to primary subject taught for full-time teachers in comprehensive and vocational high schools, by primary subject taught: United States, 1967*

Comprehensive high schools						
	Total		Field of highest degree			
Primary subject taught	Number[1]	Percent[2]	Same as subject taught	Other academic	Other vocational	Education
All subjects	5,868	100.0	66.9	11.6	3.0	18.5
Total academic	4,910	100.0	68.4	12.0	1.7	17.9
Social studies	929	100.0	67.0	11.1	2.2	19.7
English	1,321	100.0	71.8	12.0	.8	15.4
Science	687	100.0	63.6	12.3	2.5	21.6
Mathematics	690	100.0	56.1	16.3	3.3	24.3
Foreign language	482	100.0	71.9	16.9	.7	10.5
Fine arts	221	100.0	81.0	6.3	2.2	10.5
Physical education	580	100.0	74.3	6.1	1.4	18.2
Total vocational	958	100.0	60.0	9.1	9.5	21.4
Engineering technology	86	100.0	9.4	13.9	59.3	17.4
Automotive trades	169	100.0	64.0	13.6	2.3	20.1
Business education	369	100.0	59.6	8.1	3.1	29.2
Agriculture, home economics	238	100.0	88.2	1.2	.9	9.7
Other vocational	97	100.0	30.9	20.6	23.7	24.8

Vocational high schools						
	Total		Field of highest degree			
Primary subject taught	Number[1]	Percent[2]	Same as subject taught	Other academic	Other vocational	Education
All subjects	831	100.0	58.5	12.0	8.9	20.6
Total academic	469	100.0	61.4	13.6	3.4	21.6
Social studies	99	100.0	56.6	7.1	5.0	31.3
English	135	100.0	67.4	17.0	.8	14.8
Other academic	235	100.0	60.0	14.4	4.2	21.4
Total vocational	362	100.0	55.0	9.6	16.0	19.4
Engineering technology	54	100.0	44.4	7.5	29.7	18.4
Automotive, trades	86	100.0	75.6	5.7	2.4	16.3
Business education	99	100.0	49.5	11.2	9.1	30.2
Other vocational	123	100.0	49.6	12.1	25.2	13.1

[1] This table includes only teachers who indicated a specific major field in which they received a degree.
[2] Rows may not add to 100.0 percent due to rounding and nonresponse.
Source: Based upon unpublished data from a sample survey conducted in 1967 by the Bureau of Social Science Research, Inc. and supported in part by funds from the U.S. Office of Education, Bureau of Research.

TABLE 26.—*Type of certification held by full-time teachers in comprehensive and vocational high schools by primary subject taught: United States, 1967*

Comprehensive high schools

Primary subject taught	Total: Number	Total: Percent [1]	Type of certification: Provisional	Standard or permanent	Vocational	Other	None
All subjects	7,304	100.0	11.2	66.8	5.6	11.8	0.7
Total academic	5,686	100.0	11.8	71.0	.5	11.8	.6
Social studies	1,040	100.0	9.7	75.2	.8	11.7	.8
English	1,474	100.0	14.2	63.0	.2	12.8	.5
Science	822	100.0	11.2	74.6	.5	11.8	.8
Mathematics	812	100.0	12.9	72.4	.7	11.5	1.2
Foreign language	531	100.0	16.0	68.5	.6	10.4	1.8
Fine arts	377	100.0	7.4	73.5	.5	14.3	.8
Physical education	630	100.0	8.4	76.7	.3	11.6	.1
Total vocational	1,618	100.0	9.0	52.3	23.6	9.6	.9
Engineering technology	130	100.0	10.8	40.8	26.9	10.0	.8
Automotive, trades	279	100.0	10.0	44.4	29.0	10.0	.4
Business education	709	100.0	9.4	64.6	12.1	10.2	1.3
Agriculture, home economics	358	100.0	5.6	43.6	34.9	8.7	.0
Other vocational	142	100.0	11.3	39.4	38.7	8.5	2.8

Vocational high schools

Primary subject taught	Total: Number	Total: Percent [1]	Type of certification: Provisional	Standard or permanent	Vocational	Other	None
All subjects	1,261	100.0	10.2	48.5	26.8	7.9	2.4
Total academic	565	100.0	11.6	67.1	3.7	10.8	2.7
Social studies	113	100.0	6.2	69.9	.0	15.0	5.3
English	152	100.0	9.2	76.3	.7	7.9	2.0
Other academic	300	100.0	13.0	61.3	6.7	10.7	2.0
Total vocational	696	100.0	9.8	33.5	45.5	5.6	2.2
Engineering technology	126	100.0	10.3	22.2	58.7	4.8	2.4
Automotive, trade	205	100.0	6.8	20.0	66.3	2.4	2.4
Business education	176	100.0	11.9	58.0	11.4	11.9	1.7
Other vocational	189	100.0	10.6	32.8	46.0	3.7	2.1

[1] Rows may not sum to 100.0 percent due to rounding and to nonresponse.

Source: Based upon unpublished data from a sample survey conducted in 1967 by the Bureau of Social Science Research, Inc., and supported in part by funds from the U.S. Office of Education, Bureau of Research.

sive high schools, least frequently reported their highest degree to be in the field they teach. (Table 25).

Certification.—Lack of some form of certification is rare for all fields in both types of high schools. In vocational high schools, teachers of vocational subjects are twice as likely to be certified as vocational teachers than are their counterparts in comprehensive high schools. (Table 26).

Vocational and Technical Education

Federally reimbursable vocational programs are offered in approximately 18,000 public schools of all types in the United States. The vast majority of these programs (91 percent) are in regular or comprehensive public secondary schools. There are also programs in more than 1,000 specialized vocational and technical schools (secondary and postsecondary) and in over 400 community or junior colleges—well over three-fourths of all public 2-year colleges in the United States (table 27).

In this section of the appendix, all tables relate to federally reimbursable vocational education programs. These are the programs approved in State plans submitted under the Vocational Education Act of 1963 and related legislation. Excluded because of lack of

TABLE 27.—*Number of schools offering federally reimbursable vocational education programs, by type of institution: United States and outlying areas, 1966–67*

Type of institution	Number	Percent
Total institutions	17,912	100.0
Regular or comprehensive secondary schools	16,357	91.3
Vocational and technical schools (secondary)	325	1.8
Vocational and technical schools (postsecondary)	526	2.9
Vocational aid technical schools (combined secondary and postsecondary	190	1.1
Community or junior college	402	2.2
University or college	107	.6
Under contract:		
Private schools, institutions, associations and governmental agencies	5	([1])

[1] Less than 0.1 percent.

Source: U.S. Department of Health, Education, and Welfare, Office of Education, Bureau of Adult, Vocational, and Library Programs, and National Center for Educational Statistics (unpublished data).

information are the private school sector, including proprietary institutions, vocational training offered by business, industry, and the Armed Forces, and public school programs not part of State plans.

An outstanding feature of federally reimbursable institutional vocational education is its recent growth. Enrollment had been increasing for a number of years but in the 3 year period, 1963–64 to 1966–67, it has increased by approximately 2.4 million or more than 50 percent (table 28). The rela-

TABLE 28.—*Enrollment in federally reimbursable vocational education classes and enrollment relative to population, by State: United States and outlying areas, 1960–61, 1963–64, and 1966–67*

States, by region	Enrollment in vocational education			Enrollment per 1,000 total resident population		
	1960–61	1963–64	1966–67[1]	1960–61	1963–64	1966–67
Total	3,855,564	4,566,390	6,994,240	21.1	23.9	35.3
New England:						
Connecticut	31,180	33,141	90,593	12.0	11.9	30.9
Maine	9,437	8,769	21,564	9.5	8.9	22.2
Massachusetts	67,568	71,991	135,564	13.0	13.6	25.0
New Hampshire	7,398	7,892	10,879	12.2	11.9	15.9
Rhode Island	8,484	11,800	9,228	9.8	13.3	10.3
Vermont	6,195	8,002	9,774	15.8	20.1	23.4
Mid-East:						
Delaware	10,314	11,007	17,323	22.4	22.8	33.1
District of Columbia	8,560	8,009	9,584	11.0	10.8	11.8
Maryland	25,707	37,861	162,393	8.1	11.0	44.1
New Jersey	30,151	37,472	175,171	4.8	5.6	25.0
New York	187,984	331,884	595,979	10.9	18.5	32.5
Pennsylvania	102,967	109,292	220,705	9.1	9.5	19.0
Great Lakes:						
Illinois	113,376	125,899	180,696	11.3	12.4	16.6
Indiana	72,371	75,151	81,711	16.0	15.6	16.3
Michigan	136,160	160,396	264,517	17.3	19.6	30.8
Ohio	114,756	169,788	243,818	11.8	16.8	23.8
Wisconsin	102,446	152,942	150,141	26.0	37.3	35.8
Plains:						
Iowa	62,466	65,985	80,420	22.6	23.9	29.2
Kansas	40,192	45,387	58,635	18.4	20.3	25.8
Minnesota	94,117	108,283	138,721	27.6	30.7	38.7
Missouri	66,867	69,899	101,874	15.5	15.6	22.1
Nebraska	31,146	31,720	43,825	22.1	21.6	30.5
North Dakota	16,239	20,239	20,656	26.7	31.1	32.3
South Dakota	13,635	16,486	17,410	20.0	23.6	25.8
South East:						
Alabama	97,018	129,951	126,574	29.9	37.9	35.8
Arkansas	88,175	93,476	91,519	49.4	48.2	46.5
Florida	128,817	186,950	306,390	26.0	33.1	51.1
Georgia	158,860	168,119	249,232	40.2	39.1	55.2
Kentucky	65,776	81,828	94,903	21.6	25.9	29.8
Louisiana	89,936	91,954	121,915	28.5	26.3	33.3
Mississippi	96,078	98,567	106,263	44.0	42.8	45.3
North Carolina	143,377	187,682	271,098	31.5	38.6	53.9
South Carolina	109,773	113,500	127,926	46.0	44.9	49.2
Tennessee	110,330	101,581	124,688	30.8	26.7	32.0
Virginia	106,864	114,756	197,363	26.9	26.2	43.5
West Virginia	31,370	33,923	49,834	16.8	18.6	27.7
South West:						
Arizona	27,859	32,349	50,739	21.3	20.9	31.1
New Mexico	11,380	14,003	22,390	11.9	13.9	22.3
Oklahoma	73,205	73,861	88,885	31.4	30.0	35.6
Texas	366,434	441,111	568,380	38.2	42.4	52.3
Rocky Mountain:						
Colorado	55,324	54,582	78,025	30.3	28.1	39.5
Idaho	15,597	16,492	23,293	23.4	24.0	33.3
Montana	9,684	11,777	14,654	14.3	16.8	20.9
Utah	27,104	27,699	63,455	30.0	28.4	62.0
Wyoming	6,893	7,964	9,536	20.9	23.6	30.3

TABLE 28—Continued

States, by region	Enrollment in vocational education			Enrollment per 1,000 total resident population		
	1960–61	1963–64	1966–67 [1]	1960–61	1963–64	1966–67
Far West:						
Alaska	1,972	2,667	6,103	8.7	10.4	22.4
California	438,753	499,517	951,862	27.9	27.7	49.7
Hawaii	18,259	18,289	17,215	28.9	25.7	23.3
Nevada	7,574	10,030	17,939	26.5	24.0	40.4
Oregon	33,336	33,868	58,638	18.8	18.0	29.3
Washington	106,309	122,237	207,586	37.9	41.1	67.2
Outlying areas:						
Guam	1,643	1,182	639	25.4	17.1	6.8
Puerto Rico	67,011	76,181	104,579	27.8	29.6	38.8
Virgin Islands	1,137	999	1,418	([2])	([1])	25.3

[1] Provisional data.

[2] Not applicable.

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Reports*, Series P–25, No. 384 (pp. 11 and 14) and No. 392 (p. 4); U.S. Department of Health, Education, and Welfare, Office of Education, *Vocational and Technical Education, 1961* (p. 7) and *Vocational and Technical Education, 1964* (p. 45); U.S. Department of Health, Education, and Welfare, Office of Education, Division of Vocational and Technical Education and National Center for Educational Statistics (unpublished data).

tively large increase in the enrollment per 1,000 population, nearly 50 percent over this same period, is further evidence of this growth. Areas in the country showing the largest vocational enrollment per 1,000 population in 1966–67 were the Southeast where seven States have 40 or more students enrolled per 1,000 population and the Far West, in which Washington and California had 67 and 50 enrolled per 1,000 respectively.

The vocational education fields which had the largest percent increase in enrollment between 1965 and 1967 were office education and health. The more traditional federally reimbursable vocational education fields, agriculture and home economics, showed the smallest percent increases during this period (table 29). Home economics, however, continues to enroll more students than does any other field. The differential growth rate reflects in part, the changed focus of the Vocational Education Act of 1963. In the case of office education, however, the relatively large enrollment figures derive from the fact that office education programs became eligible for Federal funding under the 1963 Vocational Education Act. Many existing programs previously receiving funds from other sources, or classified in other areas, were brought together and reported as "office education" as a result of the 1963 act.

In terms of types of students taught, the largest enrollment gains have been for postsecondary and special needs education (handicapped, disadvantaged, etc.), which have more than doubled during the period 1965 to 1967. It must be noted, however, that these two groups still account for only a small proportion of the total vocational education enrollment. The small numbers of special needs vocational students is understandable because federally reimbursable vocational education programs specifically designed for these students began only with the Vocational Education Act of 1963.

Table 30 shows that, in contrast to programs in other fields, only a small proportion of the enrollment in health and technical programs is at the secondary level and a relatively large proportion is at the postsecondary level. Although at least 25 percent of enrollment in each type of program is at the adult level, enrollment in distributive programs and trades and industry programs stand out in this regard with 63 percent of enrollment at the adult level.

Examination of enrollment in vocational programs by grade (table 31) reveals that, for students at the secondary level, enroll-

TABLE 29.—*Percent change of enrollment in federally reimbursable vocational education classes: United States and outlying areas, 1964–65 and 1966–67*

Field of vocational education and type of student	Enrollment		Percent change
	1964–65	1966–67 [1]	
All programs	5,430,611	6,994,240	28.8
Secondary	2,819,250	3,530,935	25.2
Postsecondary	207,201	500,769	141.7
Adult	2,378,522	2,891,409	21.6
Special needs	25,638	71,127	177.4
Agriculture	887,529	934,463	5.3
Secondary	516,893	508,701	−1.6
Postsecondary	2,054	8,093	294.0
Adult	367,287	412,725	12.4
Special needs	1,295	4,944	281.2
Distributive	333,342	480,380	44.1
Secondary	76,186	150,615	97.7
Postsecondary	6,384	21,016	229.2
Adult	250,222	303,880	21.4
Special needs	550	4,869	785.3
Health	66,772	115,512	73.0
Secondary	8,744	17,164	96.3
Postsecondary	21,303	54,131	154.1
Adult	36,517	42,645	16.8
Special needs	208	1,572	655.8
Home economics	2,098,520	2,185,671	4.2
Secondary	1,442,807	1,477,673	2.4
Postsecondary	2,060	3,506	70.2
Adult	650,211	685,117	5.4
Special needs	3,442	19,375	462.9
Office	730,904	1,568,900	114.7
Secondary	498,034	981,210	97.0
Postsecondary	43,638	192,605	341.4
Adult	187,468	389,194	107.6
Special needs	1,769	5,891	233.0
Technical	225,737	267,338	18.4
Secondary	23,877	27,598	15.6
Postsecondary	71,845	98,044	36.5
Adult	130,015	140,842	8.3
Special needs	--------	854	----
Trades/Industry	1,087,807	1,441,976	32.6
Secondary	252,709	367,974	45.6
Postsecondary	59,922	123,374	105.9
Adult	756,802	917,006	21.2
Special needs	18,374	33,622	83.0

[1] Provisional data.

Source: U.S. Department of Health, Education, and Welfare, Office of Education, *Vocational and Technical Education, 1965* (pp. 8–10); U.S. Department of Health, Education, and Welfare, Office of Education, Bureau of Adult, Vocational, and Library Programs, and National Center for Educational Statistics (unpublished data).

ment tends to be concentrated in the higher grades for all fields with the exceptions of agriculture and home economics. The bulk of vocational education for adults is supplementary, that is, it builds upon their previous training and experience; it represents "continuing education." Adult education programs in the health, office, and distributive fields differ from the pattern in the other fields in that from one-third to over half the enrollment is preparatory; that is, it leads to the acquisition of entry level skills.

TABLE 30.—*Enrollment in federally reimbursable vocational education classes, by level and type of program: United States and outlying areas, 1966–67* [1]

Type of program	Total		Secondary	Post-secondary	Adult	Special needs
	Number	Percent				
All programs	6,994,240	100.0	50.5	7.2	41.3	1.0
Agriculture	934,463	100.0	54.4	.9	44.2	.5
Distributive	480,380	100.0	31.3	4.4	63.2	1.1
Health	115,512	100.0	14.8	46.8	37.0	1.4
Home economics	2,185,671	100.0	67.6	.2	31.3	.9
Office	1,568,900	100.0	62.5	12.3	24.8	.4
Technical	267,338	100.0	10.3	36.7	52.7	.3
Trades/Industry	1,441,976	100.0	25.5	8.6	63.6	2.3

[1] Provisional data.

Source: U.S. Department of Health, Education, and Welfare, Office of Education, Bureau of Adult, Vocational, and Library Programs, and National Center for Educational Statistics (unpublished data).

Tables 32 through 34 present data on teachers in federally reimbursable vocational education programs. The largest group of teachers are those who teach courses full time in secondary schools. Those teaching part time in secondary schools represent a considerably smaller number. In contrast, teachers of adult vocational education are to a very large extent part-time teachers with a preponderance coming from business and industry, although a number of adult education teachers are also secondary teachers. Teachers of vocational education at the postsecondary level and those teaching students with special needs both full time and part time are considerably fewer in number, reflecting the smaller enrollments at these levels, as indicated in table 29.

The total number of teachers has increased approximately 21 percent from 1964–65 to 1966–67 (table 33). This is a somewhat smaller percent increase than that for enrollment during the same 3-year period (table 29). The percent increase at the secondary level has been about the same for teachers as for student enrollments, but the increase in teachers at the other three levels has lagged behind the increases in enrollment.

The distributions of teachers by type of program at the different instructional levels (table 34) are seen to largely parallel those for student enrollments (table 30). Data on additional characteristics of vocational teachers in comparison to teachers of academic courses have been presented in tables 29 to 33 in the section on elementary and secondary education.

Higher Education

Over the past century the expansion of higher education in the United States has been enormous and has continued through the 1960's. Indicative of this expansion are increases in the number of institutions of higher education, of degrees conferred, and of the sizes of faculty and enrollments (table 35).

Tables 36 through 39 present some of the characteristics of the enrollments in four different categories of institutions of higher education. The categories include 2- and 4-year public and private institutions. These tables provide a perspective from which to view the needs for professional staff members.

Of the four institutional categories, public 4-year institutions have the largest student enrollments—more than half of all students are enrolled in such colleges and universities (table 36). The highest rate of increase in student enrollment, however, has occurred in public 2-year institutions—206 percent in 10 years. Public 4-year institutions have the next highest rate of enrollment increase (table 36). It appears that public institutions, with over two-thirds the total enrollment and the highest rates of increase in enrollment, are taking the brunt of the student population expansion.

New patterns are also emerging in the form of enrollment. In the fall of 1967, nearly

TABLE 31.—*Enrollment in federally reimbursable vocational education classes, by grade, level, and type of program: United States and outlying areas, 1966–67*[1]

Grade and level	Total		Agriculture		Distributive		Health		Home economics		Office		Technical		Trades and industry	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	6,994,240	----	934,463	----	480,380	----	115,512	----	2,185,671	----	1,568,900	----	267,338	----	1,441,976	----
Secondary	3,530,935	100.0	508,701	100.0	150,615	100.0	17,164	100.0	1,477,673	100.0	981,210	100.0	27,598	100.0	367,974	100.0
Grade 9	813,391	23.0	169,629	33.3	423	.3	73	.4	568,407	38.5	47,685	4.9	567	2.1	26,607	7.2
Grade 10	721,308	20.4	136,339	26.8	10,293	6.8	1,991	11.6	333,129	22.5	169,314	17.3	5,086	18.4	65,156	17.7
Grade 11	901,634	25.5	111,738	22.0	54,031	35.9	4,408	25.7	254,063	17.2	343,874	35.0	9,126	33.1	124,394	33.8
Grade 12	1,094,602	31.1	90,995	17.9	85,868	57.0	10,692	62.3	322,074	21.8	420,337	42.8	12,819	46.4	151,817	41.3
Postsecondary	500,769	100.0	8,093	100.0	21,016	100.0	54,131	100.0	3,506	100.0	192,605	100.0	98,044	100.0	123,374	100.0
Grade 13	381,893	76.3	5,333	65.9	10,720	51.0	48,455	89.5	2,439	69.6	134,906	70.0	74,933	76.4	105,107	85.2
Grade 14	118,876	23.7	2,760	34.1	10,296	49.0	5,676	10.5	1,067	30.4	57,699	30.0	23,111	23.6	18,267	14.8
Adults	2,891,409	100.0	412,725	100.0	303,880	100.0	42,645	100.0	685,117	100.0	389,194	100.0	140,842	100.0	917,006	100.0
Preparatory	512,603	17.7	33,857	8.2	114,726	37.8	23,065	54.1	28,879	4.2	174,352	44.8	23,915	17.0	113,809	12.4
Supplementary	2,378,806	82.3	378,868	91.8	189,154	62.2	19,580	45.9	656,238	95.8	214,842	55.2	116,927	83.0	803,197	87.6
Special needs	71,127	----	4,944	----	4,869	----	1,572	----	19,375	----	5,891	----	854	----	33,622	----

[1] Provisional data.

Source: U.S. Department of Health, Education, and Welfare, Office of Education, Bureau of Adult, Vocational, and Library Programs, and National Center for Educational Statistics (unpublished data).

TABLE 32.—*Teachers of federally reimbursable vocational education classes by level and employment status, by State: United States and outlying areas, 1966–67*

States, by region	Total (individual teachers)	Secondary		Postsecondary		Adult				Special Needs	
		Full-time	Part-time	Full-time	Part-time	Full-time	Part-time who are secondary teachers	Part-time who are post-secondary teachers	Part-time from business and industry	Full-time	Part-time
Total	132,581	54,811	14,657	13,011	9,614	3,480	16,150	4,124	35,527	993	1,037
New England:											
Connecticut	1,553	953	20	157	39	16	107	63	732	27	0
Maine	639	123	38	100	4	----	7	21	117	---	----
Massachusetts	4,521	1,910	1,144	166	97	----	539	68	1,204	---	14
New Hampshire	250	131	15	79	3	----	5	24	22	---	1
Rhode Island	260	100	46	14	4	----	42	5	88	8	19
Vermont	360	61	96	33	5	2	-----	----	162	---	4
Mid-East:											
Delaware	405	243	69	----	----	8	23	----	85	---	----
District of Columbia	166	84	----	25	----	----	19	2	52	5	----
Maryland	2,190	1,348	239	52	53	306	612	----	-----	32	30
New Jersey	2,620	1,064	587	156	33	104	139	14	688	25	2
New York	12,793	8,277	398	957	238	7	2,012	5	2,860	9	487
Pennsylvania	6,450	4,481	203	51	92	123	723	43	1,461	26	13
Great Lakes:											
Illinois	4,044	1,094	1,090	286	186	9	-----	----	1,234	107	38
Indiana	2,310	793	507	43	47	36	270	11	871	6	7
Michigan	5,473	1,168	1,332	384	706	398	129	220	1,530	2	4
Ohio	5,216	2,327	193	246	172	457	592	82	1,668	152	4
Wisconsin	4,685	726	8	505	792	88	328	374	2,465	101	29
Plains:											
Iowa	1,519	684	57	186	42	32	125	----	512	---	6
Kansas	1,189	427	22	226	11	28	108	42	475	---	3
Minnesota	2,469	966	112	427	91	59	562	178	841	26	58
Missouri	2,305	923	538	145	80	18	252	16	551	1	44
Nebraska	949	311	175	122	51	5	123	27	319	2	16
North Dakota	612	118	202	139	11	2	67	18	186	4	----
South Dakota	415	185	115	37	14	----	-----	----	63	1	----
South East:											
Alabama	2,527	1,301	16	4	2	500	496	----	495	9	----
Arkansas	1,474	458	361	144	15	13	660	51	426	15	42
Florida	4,228	1,764	47	587	83	128	314	139	1,580	31	3
Georgia	3,329	1,656	46	479	----	290	-----	----	847	11	----
Kentucky	1,672	788	316	238	----	26	325	71	304	---	----
Louisiana	2,255	1,050	319	457	62	8	165	192	335	23	1
Mississippi	1,701	808	156	165	67	39	320	53	419	47	----
North Carolina	5,729	2,467	20	687	416	19	1,389	297	2,090	10	20
South Carolina	1,856	984	258	190	131	4	-----	----	280	11	3
Tennessee	2,066	899	323	254	3	20	309	8	568	24	1
Virginia	3,610	1,947	85	367	39	28	556	65	1,144	29	47
West Virginia	1,057	373	273	54	----	6	181	7	346	5	----
South West:											
Arizona	858	465	2	122	----	----	39	25	261	2	6
New Mexico	575	230	120	62	37	8	23	15	106	15	2
Oklahoma	1,467	1,128	32	145	37	12	1,000	36	75	---	2
Texas	6,838	4,167	85	531	202	290	2,124	48	928	133	2
Rocky Mountain:											
Colorado	1,807	340	134	226	75	48	129	98	947	27	10
Idaho	577	130	172	117	7	----	-----	----	151	---	----
Montana	382	64	161	20	21	----	47	3	117	---	8
Utah	1,071	341	181	163	133	3	147	33	202	---	18
Wyoming	298	123	74	13	4	3	22	10	73	3	4
Far West:											
Alaska	139	79	----	6	3	1	17	6	43	---	2
California	16,072	1,966	3,798	2,286	4,605	204	1,143	1,190	2,977	1	15
Hawaii	451	15	98	139	11	3	40	33	166	5	----
Nevada	442	64	128	23	24	----	36	6	188	7	8
Oregon	1,765	247	184	218	365	27	40	51	644	---	2
Washington	3,817	1,207	37	716	495	47	71	466	1,541	25	28
Outlying area:											
Canal Zone	----	----	----	----	----	----	-----	----	-----	---	----

TABLE 32—Continued

States, by region	Total (individual teachers)	Secondary		Postsecondary		Adult				Special Needs	
		Full-time	Part-time	Full-time	Part-time	Full-time	Part-time who are secondary teachers	Part-time who are post-secondary teachers	Part-time from business and industry	Full-time	Part-time
Guam	38	9	----	1	1	----	3	1	27	---	----
Puerto Rico	1,514	1,205	85	61	10	53	70	7	110	26	24
Virgin Islands	46	39	----	----	----	2	-----	----	-----	---	5

Source: U.S. Department of Health, Education, and Welfare. Office of Education, Bureau of Adult, Vocational, and Library Programs, and National Center for Educational Statistics (unpublished data).

TABLE 33.—*Teachers of federally reimbursable vocational education classes by level and type of program: United States and outlying areas, 1964–65 and 1966–67*

Level and type of program	Number of teachers		Percent change
	1964–65	1966–67	
All teachers	[1] 109,136	[1] 132,581	21.5
Secondary	[2] 54,748	[2] 69,468	26.8
Postsecondary	13,588	22,625	66.5
Adult	54,048	59,281	9.6
Special needs	1,102	2,030	84.2
Agriculture:			
Secondary	10,140	10,147	.1
Postsecondary	288	488	(3)
Adult	8,206	7,070	—13.8
Special needs	14	351	(3)
Distributive:			
Secondary	2,447	3,498	42.9
Postsecondary	238	543	(3)
Adult	4,588	5,334	16.2
Special needs	18	83	(3)
Health:			
Secondary	235	408	(3)
Postsecondary	1,731	3,517	103.1
Adult	1,446	1,567	8.3
Special needs	9	43	(3)
Home economics:			
Secondary	16,459	19,479	18.3
Postsecondary	52	425	(3)
Adult	12,984	13,429	3.4
Special needs	105	738	(3)
Office:			
Secondary	10,469	20,437	95.2
Postsecondary	837	4,646	455.0
Adult	3,965	7,921	99.7
Special needs	447	186	(3)
Technical:			
Secondary	903	964	6.7
Postsecondary	4,515	5,922	31.2
Adult	3,059	3,582	17.0
Special needs	0	44	(3)
Trades/Industry:			
Secondary	12,339	14,374	16.4
Postsecondary	5,777	7,097	22.8
Adult	19,546	22,582	15.5
Special needs	336	853	(3)

[1] Total number of individual teachers.

[2] Figures for levels of instruction represent positions rather than individuals. Because some individuals teach classes at two or more levels, the total number of teachers at all levels will be greater than the number of individual teachers.

[3] Frequencies too small for meaningful comparison of percentage changes.

Source: U.S. Department of Health, Education, and Welfare, Office of Education, *Vocational and Technical Education, 1965* (p. 23); U.S. Department of Health, Education, and Welfare, Office of Education, Bureau of Adult, Vocational and Library Programs, and National Center for Educational Statistics (unpublished data).

TABLE 34.—*Teachers in federally reimbursable vocational education classes by level and type of program: United States and outlying areas, 1966–1967*

Type of program	Individual teachers [1]	Positions					
		Number [2]	Total Percent	Secondary	Post-secondary	Adult	Special needs
All programs	132,581	155,728	100.0	44.5	14.5	39.5	1.5
Agriculture	11,849	18,056	100.0	56.2	2.7	39.2	1.9
Distributive	7,528	9,458	100.0	37.0	5.7	56.4	.9
Health	5,158	5,535	100.0	7.4	63.5	28.3	.8
Home economics	27,744	34,071	100.0	57.2	1.2	39.4	2.2
Office	29,431	33,190	100.0	61.6	14.0	23.9	.5
Technical	9,637	10,512	100.0	9.2	56.3	34.1	.4
Trades/Industry	40,248	44,906	100.0	32.0	15.8	50.3	1.9

[1] The total number of individual teachers for all types of programs is an unduplicated count of teachers in vocational education. Totals for each type of program will not sum to the total for all programs because some teachers instruct in more than one type of program.

[2] Totals for positions are the sum of counts of teachers at the secondary, postsecondary, adult, and special needs levels of instruction; in practice, one teacher sometimes fills more than one of these positions.

Source: U.S. Department of Health, Education, and Welfare, Office of Education, Bureau of Adult, Vocational, and Library Programs, and National Center for Educational Statistics (unpublished data).

TABLE 35.—*Number of institutions of higher education, faculty, enrollment, and earned degrees conferred: United States, for selected years, 1869–70 to 1967–68*[1]

	1869–70	1899–1900	1919–20	1939–40	1947–48	1957–58	1963–64	1967–68
Number of institutions:								
Total	563	977	1,041	1,686	1,753	1,940	2,140	2,382
4-year	(2)	(2)	(2)	1,180	1,280	1,397	1,503	1,593
Public	(2)	(2)	(2)	306	(2)	369	387	416
Private	(2)	(2)	(2)	874	(2)	1,028	1,116	1,177
2-year	(2)	(2)	52	456	473	543	637	789
Public	(2)	(2)	10	217	243	302	377	522
Private	(2)	(2)	42	239	230	241	260	267
Faculty total[3]	5,553	23,868	48,615	146,930	223,660	344,525	494,514	[4] 667,000
Degree credit enrollment:[5]								
Total	52,000	237,592	597,880	1,364,815	2,338,226	3,036,938	4,494,626	6,348,000
4-year	(2)	(2)	(2)	1,215,461	2,116,181	2,667,940	3,869,837	5,272,000
Public	(2)	(2)	(2)	618,814	989,372	1,436,679	2,297,146	3,338,000
Private	(2)	(2)	(2)	596,647	1,126,809	1,231,261	1,572,691	1,934,000
2-year	(2)	(2)	8,102	149,354	222,045	368,998	624,789	1,076,000
Public	(2)	(2)	2,940	107,751	163,005	315,990	551,308	967,000
Private	(2)	(2)	5,162	41,603	59,040	53,008	73,481	109,000
Undergraduate degree-credit enrollment[5]	(2)	231,761	582,268	1,268,000	2,182,000	2,718,000	4,031,000	5,659,000
Undergraduate degree-credit enrollment as percent of population, 18–21 years of age	(2)	3.9	7.9	14.5	26.9	31.1	33.7	41.3
Earned degrees conferred:[6]								
Bachelor's and first professional	9,731	27,410	48,622	186,500	271,186	362,554	498,654	686,000
Master's (except first professional)	0	1,583	4,279	26,731	42,432	65,487	101,050	149,000
Doctor's	1	382	615	3,290	3,989	8,938	14,490	22,000

[1] Data for years prior to 1963–64 are for 48 States and the District of Columbia. Later years also include Alaska and Hawaii. Estimated data are rounded to thousands.

[2] Not applicable.

[3] Total number of different individuals (not reduced to full-time equivalent). Faculty data for years prior to 1963–64 are for academic years. Faculty data for 1963–64 and 1967–68 are for the first term of the academic year.

[4] The 1967–68 estimate of total professional staff was derived as follows: *1963–64 total number of different persons* × 1967–68 total positions = 1967–68 total number of different persons.

[5] Enrollment data for years prior to 1947–48 are for academic years. Enrollment data for years 1947–48, 1957–58, 1963–64, and 1967–68 are for fall 1947, 1957, 1963, and 1967, respectively. Moreover, enrollments for 1957–58, 1963–64 and 1967–68 include also enrollments at extension centers. These numbered 293,271 in fall 1967. Total enrollment, including nondegree credit students, was 4,766,000 and 6,964,000 for 1963–64 and 1967–68, respectively. Enrollments for 1947–48 and prior years are for resident students only.

[6] Degrees granted during the year ending June 30.

Source: U.S. Department of Helath, Education, and Welfare, Office of Education, National Center for Educational Statistics, *Projections of Educational Statistics to 1976–77* (p. 15); *Digest of Educational Statistics, 1967* (pp. 70 and 75); *Statistics of Higher Education, 1957–58, Faculty, Students, and Degrees, Chapter 4, Section 1* (pp. 6–7 and 34); *Projections of Earned Degrees to 1969–70*, September 1959 (pp. 4 and 6); *Faculty and Other Professional Staff in Institutions of Higher Education*, biennially 1957–58 through 1963–64, and unpublished data prepared by the National Center for Educational Statistics.

half the resident enrollment of public 2-year institutions was made up of part-time students, almost three times the proportions enrolled in any of the three other institutional categories (table 37). Estimates for the preceding year (fall 1966) suggest that the high incidence of part-time students in public 2-year colleges is not accounted for to any great extent by nondegree credit students in these institutions, including those enrolled in occupational programs. Nondegree credit enrollment accounted for only about one-third of all part-time enrollment in public junior colleges (table 38).

Table 39 indicates for each category of institution shown the extent to which undergraduate enrollment is concentrated within States (the 10 States in each column are not necessarily the same States). Compared with 4-year institutions, the enrollment of undergraduate students in 2-year public institutions is concentrated in only a handful of States. One State, California, accounts for 40 percent of the enrollment and 10 States ac-

TABLE 36.—*Degree-credit enrollment and changes in enrollment in institutions of higher education by level and by control of institution: United States, fall 1957 to fall 1967*

Year	All colleges and universities	4-year		2-year	
		Public	Private	Public	Private
1957	3,036,938	1,436,679	1,231,261	315,990	53,008
1959	3,364,861	1,616,490	1,339,176	355,967	53,228
1961	3,860,643	1,872,531	1,470,187	456,381	61,544
1963	4,494,626	2,297,146	1,572,691	551,308	73,481
1965	5,526,325	2,886,552	1,798,336	737,890	103,547
1967 [1]	6,348,000	3,338,000	1,934,000	967,000	109,000
PERCENT CHANGE					
1957 to 1967	+109.0	+132.3	+57.1	+206.0	+105.6

[1] Estimated.

Source: U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, circulars on *Opening Fall Enrollment in Higher Education*, 1957, 1959, 1961, 1963, 1965, 1967.

TABLE 37.—*Enrollment of resident undergraduate students by attendance status, level of institution, and institutional control: United States, fall 1967*

	4-year institutions		2-year institutions	
	Public	Private	Public	Private
Total undergraduate	2,701,420	1,529,840	1,354,259	139,655
Full-time	2,293,048	1,231,648	704,861	115,333
Part-time	408,372	298,192	649,398	24,322
Percent, part-time of total	15.1	19.5	48.0	17.4

Source: U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, *Opening Fall Enrollment in Higher Education, 1967* (pp. 42–49).

TABLE 38.—*Opening enrollment of resident students in public 2-year institutions by degree-credit and attendance status: United States, fall 1966* [1]

	Total	Degree-credit	Non-degree credit	Percent non-degree credit of total
50 States and District of Columbia	1,178,444	833,977	344,467	29.2
Full-time	622,558	477,503	145,055	23.3
Part-time	555,886	356,474	199,412	35.9
Percent part-time of total	47.2	42.7	57.9	---

[1] Estimated.

Source: U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics (unpublished data).

count for over 80 percent of the national enrollment in 2-year public institutions. Enrollment in 4-year institutions is less concentrated; the 10 States with the largest undergraduate enrollment in public and private 4-year institutions account for 50 and 60 percent respectively of the national college enrollment in these two types of institutions. These comparisons indicate that enrollment in public junior colleges has the following distinctive characteristics: a high rate of increase, a large part-time student component, and concentration in a relatively few States.

TABLE 39.—*Cumulative percentages of enrollment for the top 10 States ranked separately* [1] *in accordance with undergraduate resident enrollment in selected control and level of institution groups: fall 1967*

State rank	All institutions	Cumulative percentages			
		4-year institutions			2-year public institutions [2]
		All	Public	Private	
1	14.2	9.1	7.9	15.3	39.0
2	23.6	16.0	14.3	25.1	48.7
3	29.0	21.9	20.8	32.8	54.6
4	33.9	27.8	26.5	38.6	60.4
5	38.8	33.1	31.6	43.8	66.2
6	43.0	37.6	35.3	48.7	71.7
7	48.1	41.8	38.6	52.0	76.1
8	51.6	45.6	42.2	55.2	77.7
9	54.4	48.7	45.3	58.3	79.2
10	56.7	51.6	48.1	60.7	80.7
Total United States, 50 States and District of Columbia	100.0	100.0	100.0	100.0	100.0
Number	5,725,174	4,231,260	2,701,420	1,529,840	1,354,259

[1] The same State may have a different rank in each column. California, for example, has the following ranks:

	Rank
All institutions	1
All 4-year institutions	2
4-year public institutions	1
4-year private institutions	6
2-year public institutions	1

[2] Private 2-year institutions are not shown here because of their small total enrollment.

Source: Based on data from U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, *Opening Fall Enrollment in Higher Education, 1967.*

Student Characteristics

The previous tables focused on enrollment characteristics in each type of institution. Table 40 compares individual characteristics of full-time freshmen students in the different institutions. Full-time freshmen in junior colleges report lower average grades in high school than do freshmen in 4-year institutions (colleges and universities). A sizable proportion, approximately 30 percent of the full-time entering freshmen in junior colleges, do not plan to earn a bachelor's or higher degree; in 4-year colleges and universities the comparable figure is 4 percent or less. Relatively more junior college entering freshmen plan to major in such practical fields as business, agriculture, and some of the health professions. Relatively more entering freshmen in the 4-year institutions plan to major in science and mathematics, or fields classified as preprofessional. Finally, junior colleges enroll about twice as many freshmen over 18 years of age than do the 4-year institutions. Even so, it is clear that there is considerable overlap of student characteristics among types of institutions. This suggests that both 4-year and 2-year institutions are serving quite heterogeneous groups of students.

TABLE 40.—*Entering full-time college freshmen by age, average grade in high school, highest degree planned, and probable major field, by level and control of institution attended: fall 1967* [1]

	All institutions	Universities		4-year colleges		2-year colleges	
		Public	Private	Public	Private	Public	Private
Number of institutions covered in survey	252	31	20	21	123	22	19
Total students:							
Number	185,846	72,762	21,489	19,199	35,189	23,109	7,136
Percent	[2] 100.0	100.0	100.0	100.0	100.0	100.0	100.0
Age (in years):							
17 or younger	4.8	3.7	9.3	7.6	5.5	2.0	3.8
18	76.9	81.4	80.1	80.1	80.2	68.2	70.2
19 and older	18.5	14.9	10.7	12.3	14.3	29.8	26.0
Average grade in high school:							
A (includes A+ and A−)	14.4	20.6	32.4	12.1	18.0	3.6	5.2
B (includes B+ and B−)	55.0	60.4	55.9	62.2	58.0	45.3	44.6
C (includes C+ and C−)	29.7	18.7	11.5	25.1	23.1	49.5	48.5
D	.8	.3	.2	.5	.5	1.5	1.8
Highest academic degree planned:							
None	4.2	2.5	1.5	2.2	2.3	8.9	6.8
Associate (or equivalent)	7.3	1.7	0.6	1.3	1.4	21.7	15.4
Bachelor's (BA, BS, BD)	37.7	41.5	24.4	39.1	36.9	37.9	41.1
Master's or Doctor's	47.6	51.2	68.0	55.9	56.0	27.7	33.1
Other	3.2	3.1	5.5	1.5	3.4	3.8	3.6
Probable major field:							
Agriculture	2.4	3.3	.0	1.2	.9	4.8	1.7
Business	16.2	11.8	9.4	16.2	9.3	27.3	22.5
Education	10.5	9.3	3.7	18.2	10.5	8.4	12.9
Engineering	9.5	11.4	13.2	6.4	3.4	11.1	9.9
Health professions (non-M.D.)	5.2	6.5	4.8	2.9	3.7	6.9	6.5
Natural Sciences	6.7	7.5	9.2	7.1	8.7	3.8	3.1
Mathematics and statistics	4.2	4.1	4.9	7.0	5.4	1.6	1.5
Preprofessional	6.7	9.8	11.9	3.7	8.2	4.4	3.7
Humanities [3]	17.2	16.4	19.1	16.6	23.8	12.6	18.0
Social sciences [4]	14.5	12.6	20.6	13.8	21.5	9.4	11.4
Other	5.1	5.8	1.7	5.4	2.1	7.5	6.4
Undecided	1.8	1.7	1.3	1.6	7.0	2.1	2.2

[1] Derived from a nationally representative sample of entering full-time freshmen students.

[2] May not total to 100.0 percent because of rounding.

[3] Includes English, humanities, fine arts.

[4] Includes history, political science, psychology, sociology, and anthropology.

Source: Based on data from the American Council on Education, *National Norms for Entering College Freshmen—Fall 1967* (pp. 8, 29, and 30).

Professional Staff

The characteristics of professional staff in institutions of higher education are presented in tables 41 through 44. Table 41 shows the growth in total professional staff in the four types of institutions. In the main, the growth in total professional staff generally parallels, but has not kept pace with, the growth in enrollment (table 36). Only private 4-year institutions have enlarged their staffs in sufficient numbers to keep up with enrollment growth. In general, administrative staff has increased at a higher rate than instructional staff; research staff has increased more rapidly than any of the other academic groups. There seems to be no consensus concerning the interpretation of these trends other than that they are probably largely attributable to financial conditions in the institutions. It is not possible to determine the effect of these trends upon student performance.

The proportion of instructional staff to total professional staff in the different institutional groups ranges from 70 to 90 percent (table 42a). Whereas from 80 to 94 percent of the total teaching staff in 4-year institutions teach primarily in degree-credit programs, the comparable figure for 2 year in-

TABLE 41.—*Professional staff and changes in professional staff in institutions of higher education: United States, selected years, fall 1957 to fall 1967*

	All institutions	4-year		2-year	
		Public	Private	Public	Private
Total professional staff:[1]					
1957–58	381,066	183,339	162,361	25,489	9,877
1959–60	418,788	199,543	179,515	30,408	9,322
1961–62	464,658	222,282	198,635	34,382	9,359
1963–64	544,719	272,746	219,759	41,462	10,752
1965–66 [2]	655,127	332,266	253,002	55,701	14,158
1967–68 [3]	753,470	383,663	283,483	71,346	14,978
Percent change 1957 to 1967	97.6	109.3	74.6	179.9	51.6
Total instruction staff:					
1957–58	311,164	150,890	129,834	22,921	7,519
1959–60	337,987	162,074	141,691	27,440	6,782
1961–62	366,878	177,354	151,763	30,966	6,795
1963–64	421,849	212,797	164,012	37,365	7,675
1965–66 [2]	507,672	259,582	187,768	50,256	10,066
1967–68 [3]	585,148	299,737	210,390	64,372	10,649
Percent change 1957 to 1967	88.1	98.6	62.0	180.8	41.6
Administration:					
1957–58	37,760	13,171	19,708	2,557	2,324
1959–60	43,965	15,369	23,139	2,961	2,496
1961–62	48,154	17,510	24,791	3,406	2,447
1963–64	58,367	22,563	28,749	4,055	3,000
1965–66 [2]	69,852	26,997	33,499	5,378	3,983
1967–68 [3]	79,803	31,173	37,534	6,882	4,214
Percent change 1957 to 1967	111.3	136.7	90.5	169.1	81.3
Organized Research:					
1957–58	32,142	19,278	12,819	11	34
1959–60	36,836	22,100	14,685	7	44
1961–62	49,626	27,418	22,081	10	117
1963–64	64,503	37,386	26,998	42	77
1965–66 [2]	77,603	45,687	31,735	72	109
1967–68 [3]	88,519	52,753	35,559	92	115
Percent change 1957 to 1967	175.4	173.6	177.4	([4])	([4])

[1] Represents positions filled rather than persons. The number of individuals is approximately 90 percent of the number of positions.

[2] These figures are estimates.

[3] These figures are projections.

[4] Frequencies too small for meaningful comparison of percentage changes.

Source Based on data from the U.S. Department of Health, Education. and Welfare, Office of Education, National Center for Educational Statistics, *Faculty and Other Professional Staff in Institutions of Higher Education*, biennially, 1st term 1957–58 through 1st term 1963–64.

TABLE 42a.—*Professional staff in institutions of higher education by type of institution: fall 1967 (projected)*

	All institutions		4-year institutions				2-year institutions			
			Public		Private		Public		Private	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total professional[1]	753,470	100.0	383,663	100.0	283,483	100.0	71,346	100.0	14,978	100.0
Total instructional	585,148	77.6	299,737	78.1	210,390	74.2	64,372	90.3	10,649	71.1
Administration	79,803	10.6	31,173	8.1	37,534	13.3	6,882	9.6	4,214	28.1
Organised research	88,519	11.8	52,753	13.8	35,559	12.5	92	0.1	115	0.8

[1] Represents positions filled rather than persons. The number of individuals is approximately 90 percent of that for positions.

TABLE 42b.—*Instructional staff in institutions of higher education by type of institution.*

	All institutions		4-year institutions				2-year institutions			
			Public		Private		Public		Private	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total instructional	585,148	100.0	299,737	100.0	210,390	100.0	64,372	100.0	10,649	100.0
Resident degree credit	490,883	83.9	239,790	80.0	197,549	93.9	45,882	71.3	7,662	72.0
Resident nondegree credit	23,397	4.0	3,357	1.1	2,371	1.1	15,141	23.5	2,528	23.7
Other	70,868	12.1	56,590	18.9	10.470	5.0	3,349	5.2	459	4.3

Source: Based on data from the U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, *Faculty and Other Professional Staff in Institutions of Higher Education*, biennially, 1st term 1957–58 through 1st term 1963–64.

stitutions is a little over 70 percent (table 42b).

There are definite contrasts in the characteristics of the new faculty in different types of institutions. The preparation level of new faculty members in 2-year institutions, shown in table 43, is considerably below that of new faculty members in 4-year institutions.

The types of situations from which new 4-year college and university teachers come are very different from the prior positions of new teachers in junior colleges (tables 44a, 44b). Nearly 50 percent of new teachers in 4-year institutions come from graduate school: only about one-quarter in the junior colleges do so. Over one-sixth of new teachers in junior colleges come from college or university teaching while practically no new faculty at the college and university level come from junior colleges. Approximately 30 percent of new faculty in junior colleges come from high school teaching while only 13 percent in 4-year institutions do so.

Tables 45 through 48 present additional data on the characteristics of the faculty in

TABLE 43.—*New full-time teaching faculty by level of preparation, control and level of institution: 1964–65*

Level of preparation	Total new teaching faculty	4-year institutions		2-year institutions	
		Public	Private	Public	Private
Total number	20,549	9,789	6,270	3,698	7,729
Total percent	-----	100.0%	100.0%	100.0%	100.0%
Doctor's	4,639	28.4	25.2	6.0	7.1
Master's plus 1 year	4,310	20.9	21.4	21.5	16.8
Master's	8,608	38.5	40.4	51.9	48.5
Less than master's	2,992	12.2	13.0	20.6	27.7

Source: Based on data from the National Education Association, Research Division, *Teacher Supply and Demand in Universities, Colleges, and Junior Colleges, 1963–64* and *1964–65* (pp. 20, 81 and 83). (Copyright by the National Education Association. All rights reserved.)

TABLE 44a.—*New full-time teaching faculty in four-year colleges and universities by previous position and by control of institution: 1963–64 and 1964–65*

Type of institution	Total new teaching faculty		Percent of new teaching faculty coming from						
	Number	Percent [1]	Graduate school	Junior college teaching	High school teaching	Research	Other educational occupations	Business occupations	Other noneducational occupations
All 4-year institutions	24,411	100.0	48.9	1.6	13.4	7.1	11.1	8.2	9.7
Public universities	8,926	100.0	53.4	1.1	7.1	9.7	9.7	9.7	9.3
Private universities	3,000	100.0	47.2	1.0	5.6	13.5	9.6	10.5	12.6
Public colleges	6,482	100.0	43.3	2.5	21.2	3.7	13.4	7.2	8.6
Private colleges	6,008	100.0	49.3	1.8	18.1	3.6	11.0	6.0	10.1

TABLE 44b.—*New full-time teaching faculty in junior colleges and universities by previous position and by control of institution: 1963–64 and 1964–65*

Type of institution	Total new teaching faculty		Percent of new teaching faculty coming from						
	Number	Percent [1]	Graduate school	College or university teaching	High school teaching	Research	Other educational occupations	Business occupations	Other noneducational occupations
All junior colleges	7.078	100.0	23.7	17.1	30.3	1.5	8.4	11.3	7.7
Public junior colleges	5,760	100.0	23.0	17.3	32.2	1.4	7.4	11.2	7.5
Private junior colleges	1,318	100.0	27.2	16.2	22.3	2.0	12.6	11.7	8.0

[1] May not add to 100.0 percent because of rounding.

Source: Based on data from National Education Association Research Division, *Teacher Supply and Demand in Universities, Colleges, and Junior Colleges, 1963–64 and 1964–65* (pp. 22, 85 88), (Copyright 1965 by the National Education Association. All rights reserved.)

4-year institutions. The preparation level of new teaching faculty has fluctuated somewhat since 1953, but after 1957 there has been a slow increase in the educational attainment of new teaching faculty (table 45.) New full-time faculty in universities are more likely to have a doctoral degree than are those in colleges. A greater proportion of new faculty in public universities and private colleges with larger enrollments have doctoral degrees than do those in schools with smaller enrollments (table 46). Universities tend to pay higher salaries than do colleges (table 47), and larger institutions pay more than smaller ones, although at the instructor level salaries are similar. Salaries in private colleges are lower for all ranks.

Full professors whose primary work is teaching teach fewer credit hours than do teaching faculty at the other ranks, and a progressively smaller number of students are taught with each increase in rank (table 48). In the case of faculty who are not primarily teaching the situation is somewhat different. Such faculty are more likely to be of higher rank and to teach graduate students. Furthermore, there is not as great a decrease in

TABLE 45.—*New teaching faculty by preparation: 1953–54 through 1964–65*

Year	All new teaching faculty		Percent holding		
	Number	Percent	Less than master's	Master's	Doctor's
1953–54[1]	4,232	100.0	18.2	50.4	31.4
1954–55[1]	4,694	100.0	19.3	52.3	28.4
1955–56[2]	6,337	100.0	20.1	53.2	26.7
1956–57[2]	8,308	100.0	23.1	53.4	23.5
1957–58[3]	9,293	100.0	21.8	52.9	25.3
1958–59[3]	9,100	100.0	20.8	55.4	23.8
1959–60[4]	10,221	100.0	17.1	57.0	25.9
1960–61[4]	11,184	100.0	17.4	56.8	25.8
1961–62[5]	10,439	100.0	14.3	58.4	27.3
1962–63[5]	12,186	100.0	14.9	59.7	25.4
1963–64[6]	13,562	100.0	12.6	59.2	28.3
1964–65[6]	16,059	100.0	12.5	60.4	27.2

[1] Based on reports from 656 universities and colleges.
[2] Based on reports from 827 universities and colleges.
[3] Based on reports from 936 universities and colleges.
[4] Based on reports from 1,085 universities and colleges.
[5] Based on reports from 1,009 universities and colleges.
[6] Based on reports from 1,084 universities and colleges.

Source: Based on data from the National Education Association, Research Division, *Teacher Supply and Demand in Universities, Colleges, and Junior Colleges, 1963–64 and 1964–65* (p. 13). (Copyright 1965 by the National Educational Association. All rights reserved.)

TABLE 46.—*New full-time teaching faculty in 4-year colleges and universities at each level of preparation by control and size of institution: 1964–65*

Control and size (by enrollment)	All new teaching faculty		Percent with			
	Number	Percent [1]	Doctor's	Master's plus at least 1 year	Master's	Less than master's
Public universities:						
10,000 and over	3,349	100.0	37.3	19.8	31.0	11.9
5,000–9,999	1,546	100.0	32.5	15.2	38.0	14.3
Under 5,000	928	100.0	28.7	23.5	35.0	12.8
Private universities:						
5,000 and over	1,158	100.0	35.6	18.2	32.8	13.4
Under 5,000	1,068	100.0	35.8	16.9	34.6	12.6
Public colleges	3,948	100.0	19.1	23.3	46.0	11.6
Private colleges:						
1,000 and over	1,773	100.0	20.8	24.1	42.5	12.6
500–999	1,631	100.0	20.3	23.5	44.3	12.0
Under 500	640	100.0	14.1	21.6	48.0	16.4
All institutions	16,059	100.0	27.2	21.1	39.3	12.5

[1] May not add to 100.0 percent because of rounding.

Source: Based on data from the National Education Association, Research Division, *Teacher Supply and Demand in Universities, Colleges, and Junior Colleges, 1963–64 and 1964–65* (p. 20). (Copyright by the National Education Association. All rights reserved.)

TABLE 47.—*Median salaries of instructional staff in institutions of higher education by type of institution, size of enrollment, and academic rank: 1967–68*

Type of institution and size of enrollment	All ranks combined	Professors	Associate professors	Assistant professors	Instructors
All 4-year colleges and universities	$10,235	$14,713	$11,393	$ 9,472	$7,496
Public universities:					
10,000 students and over	11,290	15,877	12,202	10,024	7,658
5,000 to 9,999	10,049	13,751	11,185	9,487	7,461
Fewer than 5,000	9,815	13,501	10,940	9,258	7,633
Private universities:					
5,000 and over	11,435	16,596	12,126	9,801	7,624
Fewer than 5,000	10,246	14,843	11,150	9,301	7,410
Public colleges	9,657	13,355	10,964	9,206	7,517
Private colleges:					
1,000 and over	9,014	12,713	10,296	8,693	7,291
500 to 999	8,428	11,393	9,490	8,213	6,962
Fewer than 500	7,882	10,092	8,645	7,686	6,700

Note: Salaries are for 9 months of full-time teaching. Data are based on reports from 1,017 4-year colleges and universities and 553 junior colleges.

Source: Based on data from the National Education Association, Research Division, *Salaries in Higher Education, 1967–68* (pp. 11, 16, 18, 20, and 22). (Copyright 1968 by the National Education Association. All rights reserved.)

the number of students taught with increase in rank as is the case for faculty who are primarily teaching.

A marked relationship exists between the student level at which faculty members teach and the number of students they teach. Of the faculty who are engaged primarily in teaching, those who teach mostly freshmen and sophomores average about 100 students each. Faculty who teach mostly graduate students, on the other hand, average less than half this many students. Faculty who teach mostly juniors and seniors have an average student load that falls between the other two groups. The same relationship exists for faculty who are not primarily teaching, although it is not as marked.

Increasingly higher proportions of new college and university teachers in engineering, agriculture, and business have doctorates. A downward trend is observed, however, in the academic attainments of new teaching faculty in English, foreign languages, geography, law, and philosophy (table 49).

New faculty in some fields have considerably more preparation than new faculty in

TABLE 48.—*Teaching faculty in 4-year colleges and universities, by primary assignment, by credit hours taught, and number of students taught: United States, spring term, 1963*

Teaching faculty	Total number	Percent of total[1] by number of credit hours taught: Not on a credit hour system	1–5 hours	6–15 hours	16 hours and more	Median hours taught	Median number students taught
FACULTY WHO ARE PRIMARILY TEACHING							
Total	123,948	1	11	79	10	11	87
Rank:							
Professor	32,877	1	16	77	6	9	79
Associate professor	29,851	1	10	79	10	11	85
Assistant professor	36,708	1	9	80	11	12	91
Instructor	20,661	1	8	80	10	12	98
Other	4,846	1	10	74	16	12	85
Student level taught most:							
Freshmen and sophomores	54,072	0	6	82	12	12	105
Juniors and seniors	49,999	1	9	81	9	11	79
Graduates	19,558	3	29	65	4	7	49
Other	319	10	17	70	3	9	54
FACULTY WHO ARE NOT PRIMARILY TEACHING							
Total	14,260	5	59	33	2	4	40
Rank:							
Professor	4,635	4	62	31	2	4	36
Associate professor	3,489	4	59	35	2	4	40
Assistant professor	3,654	6	58	33	3	4	43
Instructor	1,769	7	54	37	3	4	43
Other	718	12	55	31	1	4	41
Student level taught most:							
Freshmen and sophomores	3,381	3	50	44	4	5	55
Junior and seniors	4,913	2	57	38	2	4	39
Graduates	5,786	9	67	22	2	3	35
Other	180	23	35	41	0	4	49

[1] Totals may not add to 100.0 percent because of rounding.

Source: U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, *Teaching Faculty in Universities and 4-year Colleges, spring 1963* (pp. 115, 116, 121, 122).

TABLE 49.—*New teachers in 4-year colleges and universities—total number and those with doctorates—by field: selected years, 1956–57 to 1964–65*[1]

Field	1956–57 Total new teaching faculty	1956–57 Percent with doctorates	1958–59 Total new teaching faculty	1958–59 Percent with doctorates	1960–61 Total new teaching faculty	1960–61 Percent with doctorates	1962–63 Total new teaching faculty	1962–63 Percent with doctorates	1964–65 Total new teaching faculty	1964–65 Percent with doctorates
All fields	8,308	23.5	9,100	23.8	11,184	25.8	12,186	25.4	16,059	27.2
Agriculture	316	23.8	216	30.1	206	35.0	202	41.1	241	49.4
Biological sciences	426	51.2	449	49.0	585	48.2	658	51.7	812	50.2
Business and commerce	476	8.8	434	11.4	552	15.8	554	17.7	758	20.1
Education	634	31.4	701	30.8	860	31.5	960	36.3	1,352	32.3
Engineering	739	11.1	772	15.8	810	25.9	700	29.0	924	45.1
English	800	17.7	805	13.7	1,054	13.6	1,280	12.6	1,666	10.9
Fine arts	773	9.8	876	9.2	1,020	10.2	1,126	9.2	1,525	9.8
Foreign languages	305	27.9	397	27.0	710	21.3	906	18.7	1,144	17.3
Geography	44	27.3	47	29.8	82	17.1	104	15.4	112	15.2
Health sciences	333	22.8	460	25.9	439	18.9	452	13.7	616	20.0
Home economics	199	6.0	185	8.1	197	10.7	186	12.9	188	5.9
Industrial and vocational arts	128	7.0	74	13.5	85	8.2	91	16.5	100	8.0
Journalism	36	2.8	49	4.1	52	13.5	43	9.3	68	5.9
Law	65	27.7	86	17.4	84	17.8	75	18.7	138	18.8
Library science	166	3.0	177	5.1	111	1.8	122	4.9	152	5.3
Mathematics	411	20.5	491	20.0	671	22.2	733	20.6	994	23.2
Philosophy	99	38.4	121	34.7	200	40.0	224	28.6	269	26.8
Physical and health education	462	5.0	439	4.6	549	5.5	593	4.9	756	4.5
Physical sciences	695	43.7	851	44.3	938	47.4	1,061	51.1	1,267	59.1
Psychology	216	55.3	213	51.6	320	51.9	316	48.4	486	61.3
Religion	170	34.1	179	30.2	228	27.6	208	34.6	268	30.8
Social sciences	812	33.7	889	33.6	1,172	35.9	1,364	29.2	2,001	27.9
Others	2	—	189	9.5	259	24.7	228	15.8	227	13.2

[1] Does not include dentistry and medicine.

Source: Based on data from the National Education Association, Research Division, *Teacher Supply and Demand in Universities, Colleges, and Junior Colleges 1963–64 and 1964–65* (pp. 17 and 19). (Copyright 1965 by the National Education Association. All rights reserved.)

TABLE 50.—*New faculty in 4-year colleges and universities by preparation and field: 1964–65*

Field	Total new teaching faculty		Percent with			
	Number	Percent	Doctor's degree	Master's degree plus 1 year	Master's degree	Less than master's degree
All fields [1]	16,059	100.0	27.2	21.1	39.3	12.5
Agriculture	241	100.0	49.4	14.5	25.7	10.4
Biological sciences	812	100.0	50.2	15.9	27.1	6.8
Business administration	758	100.0	20.1	22.7	43.7	13.6
Education	1,852	100.0	32.3	24.0	34.3	9.3
Engineering	924	100.0	45.1	12.4	29.2	13.2
English	1,666	100.0	10.9	25.0	52.6	11.5
Fine arts	1,525	100.0	9.8	21.5	54.4	14.3
Foreign languages	1,144	100.0	17.3	24.6	41.4	16.7
Geography	112	100.0	15.2	38.4	41.1	5.4
Health sciences	616	100.0	20.0	7.3	51.3	21.4
Home economics	188	100.0	5.9	14.4	67.0	12.8
Industrial and vocational arts	100	100.0	8.0	15.0	44.0	33.0
Journalism	68	100.0	5.9	16.2	55.9	22.1
Law	138	100.0	18.8	18.1	31.2	31.9
Library science	152	100.0	5.3	14.5	68.4	11.8
Mathematics	994	100.0	28.2	20.8	42.1	9.0
Philosophy	1,267	100.0	26.8	12.8	20.4	8.2
Physical and health education	269	100.0	4.5	35.3	29.7	33.5
Physical sciences	756	100.0	59.1	9.5	52.5	7.7
Psychology	486	100.0	61.3	17.3	17.7	3.7
Religion	223	100.0	30.8	24.7	32.7	11.8
Social sciences	2,001	100.0	27.9	33.5	33.1	5.5
Others	227	100.0	13.2	15.9	33.0	37.9

[1] Does not include dentistry and medicine.

Source: Based on data from the National Education Association, Research Division, *Teacher Supply and Demand in Universities, Colleges, and Junior Colleges, 1963–64 and 1964–65* (p. 66).

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other fields (table 50). In psychology and the physical sciences, 61 and 59 percent respectively of new faculty have doctorates. In contrast, less than 30 percent of the new faculty in mathematics, the social sciences, philosophy, and English have doctorates.

In the vast majority of cases for all fields, the teaching assignments of faculty members in higher education are in the same fields in which their highest degree was received (table 51).

About four-fifths of the teaching faculty are men; four-fifths of the total are between the ages of 30 and 60. Faculty members in the fields of education, home economics, religion and theology, foreign languages, and literature are somewhat older than those in other fields. About the same proportions of faculty in each field teach in the same institution in which they taught during the preceding year. Exceptions to this are agriculture and the biological sciences, in which institutional mobility appears to be much higher (table 52).

Faculty members generally choose their

TABLE 51.—*Teaching faculty in 4-year institutions with highest degree in same field as primary teaching assignment: United States, spring 1963*

Field of primary teaching assignment	Number with field as primary teaching assignment	Highest degree in same field as primary teaching assignment	
		Number	Percent
Agriculture	2,986	2,394	80
Biological sciences	10,818	9,771	90
Business and commerce	6,932	4,828	70
Education	10,632	9,224	87
Engineering	9,455	8,215	87
English and journalism	11,723	10,590	90
Fine arts	13,329	12,482	94
Foreign languages and literature	7,504	6,474	86
Health fields	7,480	6,473	87
Home economics	1,946	1,639	84
Law	1,458	1,404	96
Mathematics	7,640	6,646	87
Philosophy	2,214	1,948	88
Physical and health education	6,270	5,349	85
Physical sciences	11,755	10,804	92
Psychology	3,838	3,308	86
Religion and theology	2,148	1,608	75
Social sciences	16,952	15,861	94
All other fields	3,070	(1)	(1)

[1] Not applicable.

Source: U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, *Teaching Faculty in Universities and 4-year Colleges, spring 1963* (p. 77).

TABLE 52.—*Teaching faculty in 4-year colleges and universities by primary teaching field and percent distribution by sex, age, and mobility during previous year: spring 1963*

Primary teaching field	Total number of faculty teaching	Men	Women	Age in years						Status in 1961–62		
										In higher educational institution		Not in higher education
				Under 30	30–39	40–49	50–59	60–64	65+	Same as present	Other	
Grand total	138,149	82.2	17.8	7.5	33.1	30.1	19.6	6.2	3.6	78.3	11.4	10.3
Agriculture and related fields	2,986	99.3	.7	3.2	26.6	42.2	19.1	5.7	3.2	54.6	39.1	6.4
Biological sciences	10,818	89.3	10.7	5.3	36.1	30.3	20.1	4.8	3.4	65.1	27.4	7.5
Business and commerce	6,932	82.9	17.1	6.6	29.7	35.4	18.4	6.7	3.2	82.6	7.8	9.6
Education and related fields	10,632	77.0	23.0	2.1	27.0	33.7	26.6	6.6	4.0	86.6	4.7	8.8
Engineering	9,455	99.7	.3	11.7	34.6	30.2	14.7	5.5	3.3	75.6	14.6	9.9
English and journalism	11,723	73.8	26.2	9.4	31.2	27.1	20.2	7.8	4.3	83.6	5.3	11.1
Fine arts	13,329	77.5	22.5	8.5	32.3	30.7	20.0	5.2	3.3	85.0	4.3	10.7
Foreign languages and literature	7,504	72.9	27.1	7.6	29.7	24.0	23.7	7.9	7.1	82.7	6.2	11.1
Health fields	7,480	64.7	35.3	6.1	38.7	36.8	13.3	3.7	1.3	70.4	16.9	12.7
Home economics	1,946	3.8	96.2	7.6	19.5	27.7	28.8	11.4	4.9	81.5	8.2	10.3
Law	1,458	97.1	2.9	3.7	25.0	36.0	19.1	11.1	5.2	85.3	6.6	8.1
Mathematics	7,640	85.7	14.3	12.9	35.2	20.8	20.2	6.5	4.3	77.2	9.7	13.2
Philosophy	2,214	92.8	7.2	6.7	36.1	27.0	21.6	4.3	4.3	84.6	5.3	10.1
Physical and health education	6,270	62.9	37.1	10.2	36.1	31.0	16.0	5.4	1.3	86.0	3.7	10.3
Physical sciences	11,755	94.6	5.4	8.4	34.6	29.5	18.0	6.1	3.4	70.3	19.5	10.2
Psychology	3,838	86.7	13.3	6.1	41.5	27.2	18.9	4.7	1.7	73.9	17.8	8.3
Religion and theology	2,148	91.1	8.9	3.5	31.3	26.4	27.9	6.5	4.5	85.6	9.9	4.5
Social sciences	16,952	90.0	10.0	6.3	34.6	29.9	18.9	6.4	4.0	79.1	8.8	12.1
All other fields	3,070	82.4	17.6	9.2	32.0	32.1	15.9	8.0	2.8	81.1	9.3	9.6

Source: U.S. Department of Health, Education, and Welfare, U.S. Office of Education, National Center for Educational Statistics, *Teaching Faculty in Universities and 4-year Colleges, spring 1963* (p. 80).

TABLE 53.—*Sequence of decisions by teaching faculty in 4-year colleges and universities on field of academic specialization and on teaching: spring 1963*

Field of academic specialization	Total teaching faculty		Field first	Teach first	Decisions simultaneous	Do not know the time
	Number	Percent				
Grand total	138,202	100.0	42.0	19.4	27.8	10.7
Agriculture	2,986	100.0	60.8	9.7	14.8	14.7
Biology	10,892	100.0	48.5	17.6	22.2	11.7
Business	6,974	100.0	49.2	21.5	19.3	9.9
Education	10,717	100.0	13.6	45.6	31.7	9.1
Engineering	9,497	100.0	74.2	4.5	10.1	11.2
English	11,798	100.0	30.7	22.1	38.6	8.5
Fine Arts	13,361	100.0	48.7	11.8	26.7	12.6
Foreign language	7,514	100.0	22.2	26.3	39.4	11.7
Health	7,502	100.0	60.8	7.5	13.4	18.2
Home economics	1,946	100.0	37.8	21.3	30.5	10.4
Law	1,458	100.0	59.7	7.5	19.6	13.3
Mathematics	7,640	100.0	34.8	20.8	37.1	7.2
Philosophy	2,214	100.0	28.3	26.3	35.9	9.7
Physical education	6,281	100.0	17.9	16.3	56.3	9.5
Physical sciences	11,829	100.0	63.8	11.9	15.7	8.5
Psychology	3,849	100.0	44.6	25.3	22.0	8.2
Religion	2,148	100.0	44.0	19.8	23.7	12.5
Social sciences	16,934	100.0	32.6	22.7	35.0	9.8
All other fields	2,614	100.0	42.2	20.4	22.0	15.5

Source: U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, *Teaching Faculty in Universities and 4-year Colleges, spring 1963* (p. 89).

fields of specialization before deciding upon teaching as a career (table 53). Faculty in fields closely associated with education, however, are more likely to decide first to teach.

Two-Year Institutions

Tables 54 through 57 present information on 2-year institutions. Table 54 shows both the present enrollment and its recent growth for each State. In 1967 the 10 States with the largest enrollments were California, New York, Illinois, Texas, Michigan, Florida, Washington, Massachusetts, Pennsylvania, and North Carolina. Of these 10 States, Pennsylvania, Texas and North Carolina showed the largest percentage growth from 1966 to 1967, while California, New York, and Texas experienced the largest absolute increases in enrollment.

The educational attainment of faculty in 2-year colleges varies by field (table 55). Social studies, science, and foreign languages are the fields with the highest proportions of faculty having the doctorate. The vocational fields have the highest proportion with less than a master's, and within this area, automotive trades and engineering technology predominate. The variation of degree attainment among fields for 2-year colleges, however, is low compared with that for 4-year institutions.

Over 60 percent of junior college teachers teach full time; only one-sixth are part-time employees who teach, and about one-fifth are full-time employees who teach part time. Teaching full time or being a part-time employee shows as much or more variation for specific fields of instruction as it does for areas of instruction, i.e., academic versus vocational. That is, there is at least as much

TABLE 54.—*Enrollment in 2-year institutions and change in enrollment by State: fall 1966 and 1967*

Region and State	1966	1967	Percent change from 1966 to 1967
Aggregate United States	1,330,856	1,518,079	14.1
New England	47,366	52,171	10.1
Connecticut	10,294	11,539	12.1
Maine	337	285	—15.4
Massachusetts	29,444	32,451	10.2
New Hampshire	1,404	1,115	—20.6
Rhode Island	4,313	5,057	17.2
Vermont	1,574	1,724	9.5
Mideast	176,371	214,883	21.8
Delaware	2,338	2,392	2.3
Washington, D.C.	2,544	2,608	2.5
Maryland	17,878	21,192	18.5
New Jersey	7,284	12,245	68.1
New York	124,341	144,784	16.4
Pennsylvania	21,986	31,662	44.0
Great Lakes	185,818	214,108	15.2
Illinois	79,461	93,368	17.5
Indiana	2,113	2,310	9.3
Michigan	74,275	83,639	12.6
Ohio	17,620	22,013	24.9
Wisconsin	12,849	12,[illegible]78	3.5
Plains	66,110	73,696	11.5
Iowa	14,122	17,268	22.3
Kansas	12,540	13,207	5.3
Minnesota	10,108	12,850	27.1
Missouri	22,404	22,242	—0.7
Nebraska	2,505	3,372	34.6
North Dakota	3,532	4,400	24.6
South Dakota	899	357	—60.3
Southeast	173,287	197,282	13.8
Alabama	15,150	17,688	16.8
Arkansas	2,276	2,574	13.1
Florida	74,874	83,125	11.0
Georgia	13,467	14,777	9.7
Kentucky	3,469	3,558	2.6
Louisiana	67	128	91.0
Mississippi	18,605	19,466	4.6
North Carolina	22,895	27,495	20.1
South Carolina	6,875	5,432	—21.0
Tennessee	4,095	5,588	36.4
Virginia	8,970	15,457	72.3
West Virginia	2,544	2,593	1.9
Southwest	98,068	120,455	22.8
Arizona	21,115	22,191	5.1
New Mexico	1,143	1,454	27.2
Oklahoma	10,504	12,474	18.8
Texas	65,306	84,336	29.1
Rocky Mountain	20,597	25,480	23.7
Colorado	8,849	11,960	35.2
Idaho	4,710	6,008	27.4
Montana	534	901	68.7
Utah	2,753	2,659	—3.4
Wyoming	3,751	3,957	5.5
Far West	558,353	614,687	10.1
Alaska	56	88	51.8
California	488,081	529,926	8.6
Hawaii	203	177	—12.8
Nevada	--------	--------	------
Oregon	15,424	22,792	47.8
Washington	54,589	61,707	13.0
Outlying areas [1]	4,886	5,317	8.8
Canal Zone	1,390	1,284	—7.2
Guam	--------	--------	------
Puerto Rico	2,273	2,700	18.8
Virgin Islands	1,223	1,333	9.0

[1] Excluding military personnel.

Source: U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, *Opening Fall Enrollment in Higher Education, 1966* (p. 16) and 1967 (p. 20).

variation in employment status among fields within each broad area as there is between areas (table 56).

The large majority of junior college teachers are employed only in the educational institution in which they teach (table 57). Faculty teaching academic subjects are more likely to have a single employment than are those teaching vocational subjects. Fine arts, business education, and engineering technology are the fields in which faculty are most likely to have a second job.

TABLE 55.—*Public junior college teaching faculty by level preparation and by major teaching field: spring 1967*

Subject	Total		Percent by level of highest degree		
	Number	Percent [2]	Less than M.A.	M.A., M.S., M.Ed.	Ph.D., Ed.D.
Total	2,297	100.0	12.2	75.5	12.0
Academic fields	1,393	100.0	12.5	72.2	14.5
Social studies	300	100.0	11.3	69.3	19.0
English	328	100.0	9.4	81.4	9.1
Science	288	100.0	12.5	72.2	14.5
Mathematics	199	100.0	15.6	79.9	4.5
Foreign language	69	100.0	14.5	71.0	14.4
Fine arts	97	100.0	9.3	79.3	12.3
Physical education	112	100.0	17.0	75.8	5.3
Vocational fields	904	100.0	41.5	48.4	2.7
Engineering technology	235	100.0	53.6	40.4	1.7
Automotive trades	94	100.0	73.4	21.2	5.0
Business education; distributive education	337	100.0	26.4	68.5	1.7
Health	109	100.0	43.1	49.5	1.8
Other vocational	129	100.0	52.7	38.0	.8

[1] Preliminary, subject to revisions.

[2] Rows may not add to 100 percent due to rounding and nonresponse.

Source: Based upon an unpublished sample survey conducted in 1967 by the Bureau of Social Science Research, Inc., and supported in part by funds from the U.S. Office of Education, Bureau of Research. The teachers were employed in public junior and community colleges "fed" by a national probability sample of public secondary schools.

TABLE 56.—*Public junior college teaching faculty by type of teaching assignment and employment status and by major teaching field: spring 1967* [1]

Major teaching field	Total		Percent by teaching assignment		
			Full-time employees		Part-time employees who teach
	Number	Percent [1]	Teach full time	Teach part time	
Total	2,297	100.0	62.4	20.3	16.8
Academic fields	1,393	100.0	65.8	21.8	11.8
Science	288	100.0	68.7	20.5	10.8
Mathematics	199	100.0	63.8	20.1	15.1
Social studies	300	100.0	61.3	24.7	13.7
English	328	100.0	71.3	15.9	11.6
Foreign language	69	100.0	68.1	21.7	10.1
Fine arts	97	100.0	52.6	35.1	12.4
Physical education	112	100.0	67.0	25.9	4.5
Vocational fields	904	100.0	57.2	18.1	24.5
Engineering technology	235	100.0	55.7	16.6	27.7
Automotive, trades	94	100.0	66.0	9.6	24.5
Business education, distributive education	337	100.0	51.9	16.9	30.9
Health	109	100.0	73.4	16.5	9.2
Other vocational	129	100.0	53.5	31.5	15.0

[1] Preliminary, subject to revision.

[2] Rows may not add to 100.0 percent due to rounding and nonresponse.

Source: Based upon an unpublished sample survey conducted in 1967 by the Bureau of Social Science Research, Inc., and supported in part by funds from the U.S. Office of Education, Bureau of Research. The teachers were employed in public junior and community colleges "fed" by a national probability sample of public secondary schools.

TABLE 57.—*Public junior college teaching faculty by employment outside their educational institutions and by major teaching field: spring 1967* [1]

Subject	Total		Percent by employment		
			Working outside		Not working outside
	Number	Percent [2]	Full-time	Part-time	
Total	2,297	100.0	11.5	16.1	70.4
Academic fields	1,393	100.0	7.3	16.1	75.4
Social studies	300	100.0	8.3	19.3	71.6
English	328	100.0	5.7	13.4	79.5
Science	288	100.0	7.6	10.1	80.9
Mathematics	199	100.0	11.6	14.1	74.4
Foreign language	69	100.0	4.3	8.6	85.5
Fine arts	97	100.0	6.1	44.3	47.4
Physical education	112	100.0	3.5	14.2	79.4
Vocational fields	904	100.0	20.1	16.1	62.7
Engineering technology	235	100.0	26.8	17.4	54.8
Automotive, trades	94	100.0	15.9	13.8	69.1
Business education, distributive education	337	100.0	26.4	17.8	55.4
Health	109	100.0	2.7	5.5	86.2
Other vocational	129	100.0	9.3	20.2	63.6

[1] Preliminary, subject to revision.

[2] Rows may not add to 100.0 percent due to rounding and nonresponse.

Source: Based upon an unpublished sample survey conducted in 1967 by the Bureau of Social Science Research, Inc., and supported in part by funds from the U.S. Office of Education, Bureau of Research. The teachers were employed in public junior and community colleges "fed" by a national probability sample of public secondary schools.

Persons Who Have Entered and Who Plan to Enter Teaching

This section is devoted to a consideration of characteristics of students who enter education as a career. A comprehensive and systematic treatment of this general subject might rest upon a body of information concerning a base group of college students, beginning early in their college careers and following them through college and into their occupational careers. Such a unified body of information, however, is not presently available. In this section an attempt has been made to characterize some aspects of this sequence with the data that are available. The information presented in this section comes from four separate studies or programs of study:

1. A nationally representative sample of entering full-time college freshmen in 1966 who were reinterviewed just before their sophomore year in 1967. Data from this source will be used to relate major field in college to teaching intention.

2. A nationally representative sample survey conducted in 1963 of the class of 1958, 5 years after graduation. This study provides data with which major field in college can be related to actual choice of occupation.

3. A national testing program of three classes of college students, freshmen (1964), sophomores (1963), and seniors (1968). Student test performance by major field and by teaching intention will be examined by means of these data.

4. A program of study of doctoral recipients covering the period 1958–1966. From this data the occupational outcomes of Ph. D. recipients will be considered.

Although all of these studies relate to the same general area of concern, any interrelationships between the findings from the several studies are very tentative. There are differences in the nature of the samples, the time periods covered, and the specific questions asked. Each of the surveys taken individually, however, provides information germane to the specific issues for which it was designed.

Teaching Intentions by Major Field in College: The teaching intentions of entering

TABLE 58.—*Intended occupation by probable major*

Intended occupation—Beginning of freshman year	Probable major—beginning of freshman year: Total		Education and physical education		Natural[1] science		Social science		Humanities and arts	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	156,089	100.0	18,028	100.0	9,388	100.0	19,308	100.0	30,730	100.0
Total teaching	39,039	25.0	15,490	85.9	1,615	17.2	3,764	19.5	11,461	37.3
College	(2,692)	(6.9)	(239)	(1.5)	(225)	(13.9)	(566)	(15.0)	(1,169)	(10.2)
Secondary	(21,876)	(56.0)	(5,747)	(37.1)	(1,228)	(76.0)	(2,144)	(57.0)	(7,849)	(68.6)
Elementary	(14,471)	(37.1)	(9,504)	(61.4)	(162)	(10.1)	(1,054)	(28.0)	(2,433)	(21.2)
School principal or superintendent	201	.1	77	.4	21	.2	26	.1	43	.1
School counselor	922	.6	105	.6	22	.2	576	3.0	107	.4
Other occupation	110,201	70.6	2,246	12.5	7,269	77.5	13,812	71.5	18,100	58.9
Undecided	5,726	3.7	110	.6	461	4.9	1,130	5.9	1,019	3.3

[1] Natural science is composed of biological science and physical science.

[2] Less than 0.05 percent.

Source: Based on unpublished data from a nationally representative sample of entering college and university freshmen, 1966 conducted by the American Council on Education.

freshmen students who plan to major in different academic fields are presented in table 58. Eighty-six percent of students who give education (and physical education) as their probable major intend to teach. The majority of these, 61 percent, intend to teach at the elementary level, another 37 percent intend to teach at the secondary school level, and only a small group, 1½ percent of those majoring in education, plan to teach at the college level. Although most education majors plan to teach, many students majoring in fields other than education also plan teaching careers. Forty-three percent of mathematics and statistics majors, 37 percent of humanities and arts majors, 20 percent of social science majors, and 17 percent of natural science majors intend to teach. The large proportion of the students majoring in these subject fields who intend to teach plan to do so in secondary schools rather than in elementary schools.

Using the numbers in table 58, the relationship between the teaching intentions of students and their major fields in college can be viewed from a slightly different perspective—what are the major fields of those students who intend to teach? Of the total number of students who, as freshmen, plan to teach at some level, 40 percent expect to major in education. The majority, in other words, major in a field other than education. Other major fields which predominate include the humanities, 20 percent; the social sciences, 10 percent; mathematics and statistics, 8 percent; and natural sciences, 4 percent. At the elementary level, about two-thirds of the teaching aspirants are prospective education majors but only one-quarter at the secondary level are probable education majors. This indicates that in any consideration of prospective teachers, particularly for secondary schools, one must look well beyond education majors to students generally. It is necessary, therefore, to consider those who intend to teach—whatever their major fields—and to distinguish among levels of teaching intention.

How much change is there in teaching intention from the beginning of the freshman year to the beginning of the sophomore year in college? The basic data are presented in tables 59 through 61.

The overall proportions of students planning to enter the various occupational areas as sophomores are very similar to the proportions who intended to enter them as freshmen, as shown from the data in table 59, excerpted from tables 60 and 61:

For all practical purposes there may be said to be no change: teaching attracted no more (and no fewer) sophomores than it had freshmen (table 59).

Looking at the consistency and change in *field—entering college and university freshmen, 1966.*

Probable major—beginning of freshman year									
Business		Mathematics and statistics		Engineering		Professional		Other	
Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
20,480	100.0	7,071	100.0	14,424	100.0	19,588	100.0	17,072	100.0
802	3.9	3,016	42.6	150	1.0	303	1.5	2,438	14.3
(22)	(2.7)	(327)	(10.8)	(27)	(18.0)	(15)	(5.0)	(102)	(4.2)
(707)	(88.2)	(2,334)	(77.4)	(112)	(74.7)	(68)	(22.4)	(1,677)	(68.8)
(73)	(9.1)	(355)	(11.8)	(11)	(7.3)	(220)	(72.6)	(659)	(27.0)
0	----	23	.3	0	----	0	----	11	.1
5	(2)	4	.1	0	----	14	.1	89	.5
19,461	95.1	3,586	50.7	14,183	98.0	19,092	97.5	12,502	73.2
212	1.0	442	6.3	141	1.0	179	.9	2,032	11.9

TABLE 59.—*Proportion of students planning to enter various occupations as sophomores compared to proportions as freshmen*

	Occupational intention (percent)								
Class in college	Total	Total teaching	College	Secondary	Elementary	Principal or superintendent	School counselor	Other occupation	Undecided
Freshmen (1966)	100.0	(25.0)	1.7	14.0	9.3	0.1	0.6	70.6	3.7
Sophomores (1967)	100.0	(25.1)	2.3	13.0	9.8	.1	.5	66.0	8.3

teaching intention for the *individual* students reveals much less consistency than might be suggested by the percentages for each of the 2 years given above. Of those who intended to go into teaching at some level as freshmen, 70 percent as sophomores also intended to teach (table 60). Marked differences exist when the several teaching levels are examined one-by-one. Intention to go into college teaching shows the least consistency—only 30 percent of the freshmen who intended to teach at the college level also intended as sophomores to teach in college. Secondary school teaching intention is somewhat more consistent—55 percent of the students maintained their intention. Intention to teach at the elementary school level has the highest degree of consistency—67 percent maintained their plans to teach in elementary school from the freshmen to the sophomore years.

Consistency of occupational intention was low in many cases including considerable change in intention of individual students between the two times both from intending-to-teach to intending-not-to-teach and from intending-not-to-teach to intending-to-teach. There was a sizable "loss" from education generally of 29 percent or about 11,300 students from the beginning of the freshman to the sophomore year (table 60). Offsetting these "losses," a nearly equal number of students from outside education had been "recruited" to education by the beginning of the sophomore year (table 61).

Occupational Outcomes of Graduates from Different Major Fields: How do the fields in which students major relate to the occupations they enter? In table 62, major in college (senior year) is related to occupational outcome 5 years after graduation. Fifty-five percent of education majors were teaching

TABLE 60.—*Intended occupation of college and university students at beginning of sophomore year (1967) by intended occupation at beginning of freshman year (1966)*

Intended occupation at beginning of sophomore year	Intended occupation at beginning of freshman year																	
	Total		Teacher								Principal or superintendent		School counselor		Other occupation		Undecided	
			Total		College		Secondary		Elementary									
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	156,089	100.0	39,039	100.0	2,692	100.0	21,876	100.0	14,471	100.0	201	100.0	922	100.0	110,201	100.0	5,726	100.0
Teacher	39,160	25.1	*27,468*	*70.3*	1,485	55.2	14,800	67.7	11,183	77.2	96	47.8	270	29.3	10,672	9.6	654	11.4
College	3,646	2.3	1,919	4.9	*810*	*30.1*	1,015	4.6	94	.6	8	4.0	79	8.6	1,582	1.4	58	1.0
Secondary	20,267	13.0	13,960	35.7	591	22.0	*12,111*	*55.4*	1,258	8.7	58	28.9	98	10.6	5,743	5.2	408	7.1
Elementary	15,247	9.8	11,589	29.7	84	3.1	1,674	7.7	*9,831*	*67.9*	30	14.9	93	10.1	3,347	3.0	188	3.3
Principal or superintendent	171	.1	42	[1]	0	0	36	.2	6	[1]	*19*	*9.5*	0	0	110	[1]	0	0
School counselor	803	.5	232	.6	6	.2	156	.7	70	.5	2	1.0	*165*	*17.9*	356	.5	48	.8
Other occupation	102,962	66.0	9,497	24.4	989	36.7	5,776	26.3	2,732	18.9	71	35.3	434	47.1	*89,809*	*81.6*	3,151	55.0
Undecided	12,993	8.3	1,800	4.6	212	7.9	1,108	5.1	480	3.4	13	6.5	53	5.7	9,254	8.4	*1,873*	*32.8*

[1] Less than 0.05 percent.

Source: Based on unpublished data from a nationally representative sample of entering full-time college and university freshmen, 1966, and from a followup survey as entering sophomores, 1967, conducted by the American Council on Education. Table produced by the American Council on Education's Office of Research for the National Center for Educational Statistics, U.S. Office of Education.

TABLE 61.—*Intended occupation of college and university students at beginning of freshman year (1966) by intended occupation at beginning of sophomore year (1967)*

Intended occupation at beginning of sophomore year	Intended occupation at beginning of freshman year (In percents)								
	Total	Teacher				Principal or superintendent	School counselor	Other occupation	Undecided
		Total	College	Secondary	Elementary				
Total	*100.0*	25.0	1.7	14.0	9.3	0.1	0.6	70.6	3.7
Teacher	100.0	*70.1*	3.8	37.8	28.5	.2	.7	27.3	1.7
College	100.0	52.6	*22.2*	27.8	2.6	.2	2.2	43.4	1.6
Secondary	100.0	68.9	2.9	*59.8*	6.2	.3	.5	28.3	2.0
Elementary	100.0	76.0	.6	11.0	*64.4*	.2	.6	22.0	1.2
Principal or superintendent	100.0	24.6	.0	21.1	3.5	*11.1*	.0	64.3	.0
School counselor	100.0	28.9	.7	19.5	8.7	.2	*20.6*	44.3	6.0
Other occupation	100.0	9.2	1.0	5.6	2.6	.1	.4	*87.2*	3.1
Undecided	100.0	13.8	1.6	8.6	3.7	.1	.4	71.2	*14.4*

[1] See table 3 for the number of cases upon which the percents are based.

Source: Based on unpublished data from a nationally representative sample of entering full-time college and university freshmen, 1966, and from a followup survey as entering sophomores, 1967, conducted by the American Council on Education. Table produced by the American Council on Education's Office of Research for the National Center for Educational Statistics, U.S. Office of Education.

full-time 5 years after receiving the baccalaureate degree. Of these, 42 percent were teaching at the secondary level and 51 percent at the elementary school level. A relatively large group of those who majored in education were not employed full time 5 years after graduation (34 percent). Housewives constitute a large proportion of this group —24 percent of all education majors (data not reported in the table). Substantial proportions of persons who majored in fields other than education were engaged in teaching—29 percent for humanities and arts, 23 percent for social sciences, 18 percent for natural sciences, 7 percent for business and commerce, and 8 percent for "other" majors.

Aptitude Test Performance of Potential Teachers: The two studies previously considered suggest that education majors may not represent even half of the supply of teachers for the Nation's schools. On this basis it is reasonable to ask whether the characteristics of those who intend to enter teaching, whatever their major fields in college, differ in any pertinent respects from those who do not intend to enter teaching.

One perspective from which to examine this question is in terms of students' intellectual capabilities. This can be done by comparing standardized test performances of those students who are intending to teach at different levels, those who are majoring in education and in fields other than education, and those who do not intend to teach. The test performances on five aptitude tests of college students intending to teach at different levels and those not intending to teach are presented in table 63. With only a few exceptions there is a consistent upward progression in average test performance on all five tests for level of teaching intention from the elementary to the college level, and for the freshman, sophomore, and senior groups studied. Those who *do not* intend to teach have mean test scores in nearly every case that fall above those students who intend to teach at the elementary and secondary school level but below those who intend to teach in college. This latter group had, in general, substantially higher test scores than the other groups considered.

Also to be considered is how education majors compare with noneducation majors in terms of aptitude test performance. The comparison of education and noneducation majors (with level of teaching controlled) can be made with the present data only at the secondary school level of teaching intention, as it is only at this level that the survey provided sufficient numbers of both edu-

Table 62.—*College seniors in 1958 who were working full time in 1963—occupation by senior undergraduate major*

Occupation 5 years after graduation	Undergraduate major													
	Total		Education		Natural[1] science		Social science		Humanities and arts		Business and commerce		Other	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	25,583	100.0	4,851	100.0	3,410	100.0	4,487	100.0	3,757	100.0	3,765	100.0	5,313	100.0
Teaching full-time	6,107	23.9	2,687	55.3	619	18.2	1,051	23.4	1,078	28.7	265	7.0	407	7.7
College	608	10.0	44	1.6	118	19.1	99	9.4	197	18.3	53	20.0	97	23.8
Secondary	2,941	48.1	1,123	41.8	378	61.1	569	54.2	565	52.4	126	47.6	180	44.3
Elementary	2,090	34.2	1,374	51.1	85	13.7	271	25.8	225	20.9	60	22.6	75	18.4
Other teaching	468	7.7	146	5.5	38	6.1	112	10.6	91	8.4	26	9.8	55	13.5
Other occupation fulltime	13,040	51.0	525	10.8	1,922	56.3	2,324	51.8	1,278	34.0	3,111	82.6	3,880	73.0
Not working fulltime	6,436	25.1	1,639	33.9	869	25.5	1,112	24.8	1,401	37.3	389	10.4	1,026	19.3

[1] In this study natural science is composed of biological science, physical science, and mathematics.

[2] Engineering comprises 60 percent of the other category.

Source: Based on unpublished data from a nationally representative sample survey of the class of 1958, conducted in 1963 by the Bureau of Social Science Research Inc. supported by funds from the National Science Foundation.

TABLE 63.—*Mean CLEP general examination scores of freshmen (1964), sophomores (1963), and seniors (1968) by type of test and by intention to teach*[1]

Intention to teach by class in school	Test				
	English composition	Natural sciences	Mathematics	Humanities	Social sciences and history
Freshmen:					
Intend to teach	487	475	482	481	463
College	541	515	547	552	516
Secondary	480	482	478	468	464
Elementary	477	438	448	466	435
Do not intend to teach	497	498	521	483	491
Sophomores:					
Intend to teach	492	474	470	506	494
College	535	512	531	576	600
Secondary	490	480	479	497	494
Elementary	476	448	433	483	452
Do not intend to teach	503	518	521	492	501
Seniors:					
Intend to teach	525	488	483	543	505
College	573	558	590	609	561
Secondary	509	495	488	519	518
Elementary	515	444	428	523	466
Do not intend to teach	519	525	510	537	534

[1] The five CLEP (College Level Examination Program) tests were administered to 2,521 full-time, second-term college freshmen in 175 institutions in the spring of 1964, 2,582 full-time second-term sophomores in 180 institutions in the spring of 1963, and 1,400 second-semester seniors from 75 institutions in the spring of 1968. These students took two tests—English composition and one of the four remaining tests. Each of the tests have possible scores ranging from 240 to 800.

Source: Based on data from the Educational Testing Service, *The Freshman Norm Sample for the General Examinations of the College-Level Examination Program*, Statistical Report SR-67-32, June 1967 (pp. 33 and 34): *The Sophomore Norming Sample for the General Examinations of the College-Level Examination Program*, Statistical Report SR-64-63, October 1964 (p. 64); Information on senior students from unpublished data.

TABLE 64.—*Mean CLEP general examination scores of sophomore college students—intention to teach by level and major field: spring 1963*[1]

Test	Level at which intend to teach[2]							
	Elementary[3]		Secondary				Do not intend to teach	
	Education major		Education major		Noneducation major[4]			
	Mean	N	Mean	N	Mean	N	Mean	N
English composition	476	(325)	477	(137)	513	(387)	503	(1,351)
Natural sciences	445	(75)	481	(37)	493	(92)	518	(327)
Mathematics	433	(86)	457	(26)	496	(99)	521	(362)
Humanities	479	(89)	457	(38)	526	(103)	492	(354)
Social sciences and history	445	(75)	464	(36)	521	(93)	501	(308)

[1] Data for a sample of 2,582 students from 180 colleges and universities.

[2] Data not provided for students intending to teach at the college level because of small numbers of cases when subdivided by major field.

[3] The large proportion of students who intend to teach at the elementary school level are education majors. Noneducation majors, therefore, are not included at this level.

[4] Scores for noneducation majors include only those students majoring in academic subjects (mathematics, natural sciences, engineering, humanities, social sciences).

Source: Unpublished data from the CLEP (College Level Examination Program) conducted by the Educational Testing Service.

cation and noneducation student scores for meaningful comparison. In table 64, data comparing education and noneducation majors at the secondary school level are presented. Data for education majors who intend to teach at the elementary school level and for those students who do not intend to teach are also included for additional comparisons. The findings indicate that, on the average, noneducation majors perform consistently better than do education majors on all five tests. Also of interest is the finding that noneducation majors intending to teach at the secondary level score higher on three of the five tests than do those students who plan to enter an occupation other than teaching.

Occupational Outcomes of Ph. D. Recipients: Data on the employers and work activities of Ph. D. recipients are presented in tables 65 and 66. It can be seen, first, that the number of doctoral recipients nearly doubled during the period 1958–60 to 1964–66 (table 66). Over 50 percent of all doctoral recipients are first employed by colleges and universities, and this is true for each broad field except for physical sciences and engineering. Colleges and universities are the first employers of approximately 60 percent of all recipients of doctorates in education, and elementary and secondary schools employ an additional 25 percent. For doctoral recipients in noneducation fields the predominant employers other than in-

TABLE 65.—*First postdoctoral employer by field of earned doctorate for 3-year periods from 1958–60 to 1964–66*

Field of doctorate	Years when doctorate was received	Total with known employer	Percent employed by: Total	Colleges and universities	Elementary and secondary schools	Government	Industry	Other	Foreign employers	Total with employer unknown
Total all fields	1958–60	24,296	100	58	6	8	16	6	6	3,420
	1961–63	32,224	100	59	5	8	13	6	9	2,414
	1964–66	44,712	100	61	5	7	12	6	9	3,779
Physical sciences and engineering	1958–60	7,192	100	39	1	6	44	4	6	1,058
	1961–63	10,420	100	45	(1)	6	34	7	9	818
	1964–66	15,082	100	48	(1)	6	30	7	9	1,885
Biological sciences	1958–60	3,949	100	58	1	13	10	7	11	985
	1961–63	5,338	100	58	1	12	8	6	15	496
	1964–66	7,159	100	59	(1)	11	7	7	16	752
Social sciences	1958–60	4,848	100	59	3	17	5	10	6	627
	1961–63	5,380	100	58	3	15	4	11	9	447
	1964–66	6,808	100	64	1	12	4	10	9	539
Arts and humanities	1958–60	3,600	100	87	3	2	1	3	4	338
	1961–63	4,419	100	87	3	1	1	3	5	301
	1964–66	6,327	100	89	1	1	1	3	6	478
Education	1958–60	4,266	100	60	26	5	1	4	4	322
	1961–63	5,432	100	60	25	5	1	4	5	276
	1964–66	7,680	100	61	25	5	1	4	4	421
Other	1958–60	941	100	66	5	2	5	14	8	90
	1961–63	1,235	100	70	2	2	4	11	11	81
	1964–66	1,656	100	73	(1)	2	5	10	10	204

[1] Less than 0.05 percent.

Source: National Academy of Sciences, *Doctorate Recipients from United States Universities, 1958–1966,* (pp. 82–84).

TABLE 66.—*Doctorate recipients by first postdoctoral work activity, by field, for the years 1962, 1963, and 1964 to 1966*

Field of doctorate	Years of doctorate	Total with activity known	Percent engaged in: Total	Fellowship	Research	Teaching	Administration	Other	Total with activity unknown
Total all fields	1962 and 1963	20,552	100	10	31	42	8	9	3,675
	1964 to 1966	43,559	100	11	27	45	8	9	4,932
Physical sciences and engineering	1962 and 1963	6,780	100	15	53	24	1	7	1,188
	1964 to 1966	14,595	100	16	48	28	1	7	1,872
Biological sciences	1962 and 1963	3,372	100	22	47	24	2	5	680
	1964 to 1966	6,927	100	27	39	26	2	6	984
Social sciences	1962 and 1963	3,355	100	6	26	43	5	20	651
	1964 to 1966	6,685	100	7	22	48	4	19	662
Arts and humanities	1962 and 1963	2,791	100	2	3	87	3	5	434
	1964 to 1966	6,232	100	2	3	89	3	3	578
Education	1962 and 1963	3,421	100	-	5	50	33	12	607
	1964 to 1966	7,502	100	1	5	48	34	12	599
Other	1962 and 1963	833	100	1	7	69	7	16	115
	1964 to 1966	1,618	100	1	9	71	7	12	242

Source: National Academy of Sciences, *Doctorate Recipients from United States Universities, 1958–1966,* (pp. 86–88).

stitutions of higher education are industry (particularly for physical sciences and engineering), and government (especially for social sciences and biological sciences).

Approximately half of all Ph. D. recipients in education teach as a first major postdoctoral activity (table 65). Doctoral recipients in education who are not hired to teach are most likely to enter administration with relatively few going into research. About a half of those receiving doctorates in the life and physical sciences and a fifth of those receiving doctorates in the social sciences engage in research as their first postdoctoral activity.

Summary

The data presented in this section indicate that, although nearly all freshmen planning to major in education intend to teach, many students also intend to teach who plan to major in fields other than education. Also, a large proportion of this latter group intend to teach at the secondary level. Furthermore, over half of the college graduates who were teaching full time 5 years after graduation had majored in a field other than education.

In terms of aptitude test performance of potential teachers, students intending to teach at the secondary school level have higher levels of performance than do those intending to teach at the elementary school level. Students intending to teach in college score the highest of all. Furthermore, noneducation majors who intend to teach in secondary school have higher scores than do education majors who intend to teach at this level. Noneducation majors who intend to teach, in many cases, achieve higher average scores than do students who anticipate nonteaching careers.

Finally, over 50 percent of doctoral recipients in all fields except the physical sciences and engineering are first employed by colleges and universities. In the case of Ph. D.'s in education, an additional 25 percent are employed by elementary and secondary schools. Approximately half of all Ph. D.'s in education teach, but of those who do not teach, most enter administration.